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GENERAL INFORMATION

I. **LOCATION:** General Leonard Wood Army Community Hospital is located on the first floor in building 310, Fort Leonard Wood, Missouri.

II. **TELEPHONE NUMBERS:** The five digit numbers listed below can be dialed directly from within this hospital. The complete prefix for these numbers is 596. When calling from outside the installation, call 596-1509.

**FOR ALL LABORATORY TEST RESULTS,
CALL THE RECEPTION DESK AT 6-1509**

**FOR ALL SURGICAL PATHOLOGY REPORTS,
CALL 6-9087**

**FOR EVENINGS, NIGHTS, AND WEEKENDS LAB,
CALL 6-1509**

Chief, Pathology Division.	6-9865
Chief, Anatomic Pathology.	6-9853
Secretary.	6-9304
Laboratory Manager	6-9852
NCOIC, Pathology Division.	6-9850
Blood Bank	6-9862
Chemistry	6-9863
Hematology	6-9864
Microbiology	6-9866

III. LABORATORY HOURS OF OPERATION:

- A. The laboratory operates 24 hours a day, 7 days a week.
- B. Monday through Friday regular duty hours are 0730-1630 with full staff.
- C. On weekends, holidays, and after regular duty hours, the lab operates with a reduced staff. Only emergency procedures are performed.

IV. BLEEDING ROOM HOURS:

A. Laboratory blood specimen collection: Outpatient and ambulatory inpatients are accepted for phlebotomy from 0730-1630 hours, Monday through Friday. Personnel are not available for phlebotomy on weekends or holidays. Physicians and ward personnel are encouraged to refer all outpatients and ambulatory ward patients to the laboratory for phlebotomy during regular duty hours.

V. LABORATORY REQUESTS:

Where available, all efforts must be made to utilize the Composite Healthcare System (CHCS) to input lab requests through Order Entry. Results will automatically be reported into the hospital system.

Wards not having Order Entry capabilities (or when the CHCS system is inoperable):

- A. The correct form must be used for each laboratory request with pertinent clinical information.
- B. In all instances, the request form must accompany the specimen at the time that it is delivered to the laboratory.

C. All specimens obtained on wards must be clearly labeled. Addressograph plate stamped adhesive type labels should be used. If the patient's recording card is unavailable, handwritten labels are acceptable.

D. All requests will be regarded as routine unless marked "STAT/ASAP".

E. All requests must include patient's name, ward/clinic, register number, name of requestor and date collected, and the sponsor's Social Security Number.

F. If requests are illegible, the laboratory is not responsible for improper delivery of results. The laboratory reserves the right to insist that clinic or ward personnel come to the laboratory to properly complete inadequate requests; patients should not be used for this purpose.

G. Failure to provide the proper information on requests may result in specimen rejection.

H. Duty Hours for patient blood collection is 0730-1630 hours.

VI. REQUEST CATEGORIES:

A. **STAT Requests:** This category is reserved for medical emergencies and is given top priority. Results will be entered into CHCS when complete. Turn-around time (TAT) is up to 60 minutes after receipt in the laboratory. The following tests are available on a STAT basis:

BLOOD BANK

Coombs' Test
Group and Rh Type
Type and Cross (T & C)
Type and Screen (T & S)

HEMATOLOGY

Body Fluid Cell Count
Complete Blood Count (CBC)
CSF Cell Count and Differential
D-Dimer
Hemoglobin (Hb) / Hematocrit (Hct)
Platelet Count
PT / PTT
Urine Ketones

MICROBIOLOGY

Gram Stain

URINALYSIS

Reducing Substances
UA (with microscopic if dipstick abnormal)
Urine HCG

CHEMISTRY

Acetaminophen
Alanine Aminotransferase (ALT)
Alkaline Phosphatase (Alk Phos)
Ammonia
Amylase
Aspartate Aminotransferase (AST)
Bilirubin (Bili) *
Blood Alcohol (Medical)
Calcium (Ca)
Carbon Dioxide (CO₂)
CKMB
Creatine Kinase (CK)
Creatinine (Creat)
CSF Protein and Glucose
Digoxin

Lactate
Lactate Dehydrogenase (LDH)
Lipase
Magnesium (Mg)
Neonatal Bilirubin (Bu/Bc) **
Osmolality (Serum or Urine)
Phenobarbital
Phosphorus
Potassium (K)
Quinidine
Salicylate (ASA)
Serum HCG qualitative
Sodium (Na)
Theophylline
Triage (Drugs of Abuse) ***

Dilantin
Gentamicin
Glucose (Gluc)
Ketones (Serum or Urine)

Tricyclic anti-depressants (TCA)
Troponin I
Uric Acid
Valproic Acid
Vancomycin

* If Total Bilirubin > 1.3 mg/dl, fraction into BU/BC and delta bilirubin.

** Bu/Bc – (unconjugated/conjugated) bilirubin. Specimens must be protected from light.

*** Urine screen for classes of Amphetamines, Barbiturates, Benzodiazepines, Cocaine, Opiates, Phencyclidine, and Tetrahydrocannabinol

NOTE: It must be emphasized that flooding the laboratory with unnecessary STAT requests will only result in delaying TAT of all results and in some cases could compromise the patient whose request was a legitimate emergency.

B. **ASAP Requests:** This category is reserved for tests needed on a rapid, but non-emergency basis. TAT is two (2) hours after receipt in the laboratory.

C. **Routine Requests:** This category should represent the majority of Pathology's workload. These requests will usually have results available the same day depending on procedures requested, time of receipt, as well as location of testing laboratory (shipped tests take approximately 10 days to report).

VII. **DELIVERY OF SPECIMENS:**

A. Requests for blood or blood products must be delivered directly to the Blood Bank (Each unit requested requires one properly filled in SF 518).

B. STAT/ASAP requests must be delivered directly to the Front Desk Area of the Laboratory during normal duty hours.

C. Routine specimens should be dropped off at the front desk.

D. Non-Duty Hours: All specimens must be delivered directly to the STAT laboratory, Clocked in and logged in THE SPECIMEN LOGBOOK by the STAT laboratory door.

VIII. **REPORTING OF RESULTS:** All laboratory results are printed directly to the ward/clinic. STAT results are available to the HCP as soon as completed via CHCS terminals located throughout the hospital.

IX. **TELEPHONE REQUESTS:** DURING CHCS DOWN-TIMES, All telephonic requests for lab results must be made to the reception desk AT 6-1509. Do not call the individual sections for results. Inquiries for anatomic pathology reports must be directed to the SECTION secretary at 6-9087. The laboratory CANNOT release results to the patient.

X. **PATHOLOGIST ON CALL:**

A. A pathologist is available at all times for consultation with the clinical staff.

B. During non-duty hours, the pathologist may be reached by contacting the laboratory at 6-1509.

C. Unusual laboratory requests or problems should be referred to the pathologist on call.

D. It must be emphasized that an autopsy permit is a consult and NOT a command to perform an autopsy. Autopsies are generally NOT indicated when death is a predicted part of the disease course. Autopsies should be sought only after consultation with the pathologist.

PATIENT INSTRUCTIONS

24-HOUR URINE COLLECTION
(AMYLASE, CALCIUM, ELECTROLYTES, CREATININE, CREATININE
CLEARANCE AND TOTAL PROTEIN)

PLEASE READ CAREFULLY

For proper evaluation of tests on a 24-hour urine sample, it is important that a complete and accurate collection be made. Important medical decisions concerning your health depend on the accurate timing of this collection.

1. Drink fewer liquids during the collection period unless otherwise instructed by your physician. **DO NOT DRINK ANY ALCOHOLIC BEVERAGES DURING COLLECTION.**
2. When you get up in the morning, void your first urine into the toilet. Record the time and the date you started the collection (_____/_____.).
3. Collect all urine for the next 24 hours in a clean container if one was not provided for you. Men may urinate directly into collection container unless otherwise instructed by the laboratory receptionist.
4. The next morning make your final collection at the same hour you recorded when you started the collection. **DO NOT DISCARD THIS URINE.** After the final collection has been made, record the time and date you completed the collection (_____/_____.).
5. Bring the specimen to the laboratory as soon as possible. Keep the specimen refrigerated during collection up to the time it is brought to the laboratory.
6. Questions concerning the 24-hour collection should be directed to the laboratory at (573) 596-1509.

NOTE: For the creatinine clearance test, your height and weight must be written on this form. Also, a blood specimen will be drawn when the 24-hour urine is brought to the laboratory. Fasting is not necessary unless directed by your physician.

PATIENT INSTRUCTIONS

GLUCOSE TOLERANCE TEST
(3 and 5 HOUR)

1. Your doctor has ordered a _____ hour Glucose Tolerance Test (GTT) for you.
2. Your test is scheduled for _____. Please arrive between 0730 and 1000 hours. If you are unable to keep this appointment, please cancel or reschedule by calling 596-1509.
3. You will be required to follow a specific diet (see next page) for three days prior to the test. You must have nothing to eat or drink after completion of diet for 12 to 14 hours except water. No alcohol should be consumed after the evening meal the preceding day. Smoking and drinking coffee are not permitted.
4. Your test will involve the following: When you arrive, a fasting blood specimen will be drawn. If your fasting glucose level is below 126, we will continue the test by giving you a glucola to drink. A schedule will then be made out of the times blood is to be collected. It will be your responsibility to enter the blood collection point when it is time to have your blood drawn at the same time, every time.
5. You must remain in the laboratory during the entire test and cannot smoke or have anything to eat or drink except water during the test. A three-hour test will take four hours to complete and a five-hour test will take six hours to complete.

PATIENT INSTRUCTIONS

CLINICAL DIETETICS BRANCH
THREE DAY GLUCOSE TOLERANCE TEST PREPARATION DIET

You must eat 3 meals a day similar to those noted below plus 3 candy bars or 6 slices of bread each day in addition to 3 meals a day.

The following foods should be eaten for 3 days prior to the scheduled day of your glucose tolerance test. You should not eat or drink anything after the evening meal on the day before the test.

BREAKFAST

Fruit or Fruit Juice
Cereal
Bread, Biscuits, Muffins or pancakes
Jelly, Sugar or Syrup
1serving
1 serving
2
2 Tablespoons

DINNER OR SUPPER

Meat, Fish, Eggs or Cheese
Potato, Rice or Macaroni
Cooked Vegetable or Salad
Bread or Roll
Dessert Pie, Cake, Pudding Ice Cream or Fruit w/Cookies Jelly or Sugar

1 average serving
1 serving
2 slices
1 serving
1 serving

2 Tablespoons

(A packed lunch may consist of two (2) meat, cheese, or egg sandwiches, fruit, cake or cookies, and a candy bar)

One pint (2 cups) of milk is to be used during the day. Coffee and tea may be used as desired.

NOTE: Fast 12-14 hours before the scheduled testing time. You may drink only water.

PATIENT INSTRUCTIONS

INSTRUCTIONS FOR OBTAINING SEMEN FOR ANALYSIS

1. Collect a complete specimen of ejaculate by masturbation. The specimen should not be collected any earlier than two days, or later than four days after the last loss of semen. The ideal interval since the last loss of semen is 48 to 72 hours; however, the interval may be modified at physician discretion. If masturbation is not compatible with your beliefs, discuss the matter with your physician.
2. Collect the specimen in the sterile cup furnished by the clinic or laboratory. Carefully label the specimen with the label given to you by the clinic or laboratory. Please write the date and time of collection on the label. If no label was provided, please record the last name, last four of the sponsor's SSN#, date and time of collection with a permanent marker.
3. Keep the specimen as close to body temperature as possible (you can keep it under the armpit or wrap specimen in a towel after it has been removed from the dryer). **DO NOT REFRIGERATE OR EXPOSE SPECIMEN TO EXTREME HEAT!**
4. Bring the specimen to the front desk in the laboratory **WITHIN 1 HOUR** of collection. Older specimens yield false results and are not acceptable.
5. Semen analysis (for fertility count) may be brought to the laboratory Monday through Friday, 0730-0900. Post-vasectomy specimens are accepted Monday through Friday, **0730-1400**.

PATIENT INSTRUCTIONS

INSTRUCTIONS FOR SUBMITTING SPUTUM SPECIMEN FOR AFB AND FUNGI

A total of three specimens are required for examination. One specimen is to be collected each morning in accordance with the following instructions:

1. Upon awakening each morning (before eating or brushing teeth), rinse your mouth with water.
2. Inhale air to full capacity of the lungs and exhale with an expulsive cough (deep cough from the chest).
3. Expectorate all sputum into a specimen cup - **NOT SALIVA** (avoid saliva to avoid the presence of normal bacterial flora in the specimen).
4. Repeat deep cough until 2-3 aliquots are collected.
5. Remove the bottom from the collection unit. There will be a colored screw cap attached to this bottom. Remove the funnel top from the collection unit and screw on the lid found in the bottom of the unit. Make sure it is snug so the container does not leak.
6. After the third morning collection, submit all three specimens and the SF-515 (test request) to the laboratory.

PATIENT INSTRUCTIONS

INSTRUCTIONS FOR SUBMITTING STOOL SPECIMENS

SPECIMEN FOR CULTURE AND SENSITIVITY

1. Defecate directly into a clean, dry container, or onto newspaper, or use Saran wrap under the toilet seat. The stool should be kept free of water and urine contamination because this could render it unsuitable for testing.
2. Open the plastic container (orange in color) containing the red fluid. Use the spoon attached to the lid to pick up a portion of the stool equal to the size of the spoon. In cases of watery stools, fill the container to the red line marked on the front of the label, being careful not to put too much into the container.
3. Close the lid tightly. Shake vigorously for 30 seconds. Fill out patient information on the side of the container to include the patient's name and the last four of the sponsor's SSN. The specimen can be stored at room temperature for no longer than 72 hours. Submit the specimen to the laboratory between the hours of 0730-1600, Monday through Friday.

SPECIMEN FOR OVA AND PARASITES

1. Defecate directly into a clean, dry container, or onto newspaper, or use Saran wrap under the toilet seat. The stool should be kept free of water and urine contamination because this could render it unsuitable for testing.
2. Open the plastic containers (blue and pink or red and yellow in color) containing clear fluid.
NOTE: THESE FLUIDS ARE TOXIC AND SHOULD NOT BE ALLOWED TO TOUCH SKIN OR BE INGESTED!
Use the spoon attached to the lid to pick up a portion of the stool equal to the size of the spoon. In cases of watery stools, fill the containers to the red mark on the front of the label, being careful not to put too much into the container.
NOTE: BOTH CONTAINERS SHOULD BE FILLED FROM THE SAME BOWEL MOVEMENT.
3. Close the lids tightly. Shake the containers vigorously for 30 seconds. Fill out patient information on the side of both containers to include the patient's name and the last four of the sponsor's SSN. The containers can be stored at room temperature for no longer than 72 hours. Submit the specimens to the laboratory between the hours of 0730-1600, Monday through Friday.

SPECIMEN FOR MACROSCOPIC EXAM

1. Defecate directly into a clean, dry container, or onto newspaper, or use Saran wrap under the toilet seat. The stool should be kept free of water and urine contamination because this could render it unsuitable for testing.
2. Place the specimen into the sterile container provided and replace the lid tightly. Fill out the label provided with the patient's name and the last four of the sponsor's SSN. Place it on the side of the container. If no label was provided, write the patient's information on the container with a permanent marker. The specimen should be brought to the laboratory within four hours of collection between the hours of 0730-1600, Monday through Friday.

SPECIMEN FOR OCCULT BLOOD

1. Defecate directly into a clean, dry container, or onto newspaper, or use Saran wrap under the toilet seat. The stool should be kept free of water and urine contamination because this could render it unsuitable for testing.

2. Collect a small fecal sample on one end of the wooden sticks provided. Apply a thin smear inside Box A. Use the opposite end of the stick to obtain a second sample from a different part of the specimen. Apply a thin smear inside Box B. Close the test card being careful not to open the back of the card. This procedure should be repeated once a day for three days or three consecutive bowel movements.
3. Fill out the patient information on the front of each card. PLEASE INCLUDE THE LAST FOUR OF THE SPONSOR'S SSN AND THE DATE COLLECTED. The specimen cards can be stored at room temperature up to 14 days. Submit the cards to the laboratory between the hours of 0730-1600, Monday through Friday.

PATIENT INSTRUCTIONS

PATIENT PREPARATION

24-HOUR URINE COLLECTION FOR VMA, CATECHOLAMINES and 5 HIAA

Your doctor has requested a 24-hour urine test on you that requires a special diet prior to the collection of the 24-hour urine and during the collection period.

Two days (48-hours) prior to starting the 24-hour collection and until the collection is complete, you should not eat the following items (they interfere with the test):

Apple, apple beverages	Decaffeinated coffee	Pineapple
Asparagus	Carbonated beverages	Tea
Avocado	Chocolate	Vanilla
Banana	Citrus fruits and beverages	
Coffee	Grain cereals	

If you are on any medication, inform the receptionist in order to rule out test interference.

The preservative in this container is poisonous and corrosive and under no circumstances should be removed. Keep away from children.

For proper interpretation of the test results on a 24-hour urine sample, it is important that a complete and accurate collection be made.

Drink less liquids during the collection period than you usually do, unless instructed otherwise by your physician. Do not drink any alcoholic beverage.

Follow these steps for collection:

1. Empty your bladder when you get up in the morning. Record the time and date you emptied your bladder and DISCARD this urine (_____/____/____).
2. From then on, COLLECT all urine you pass during the day and night in the urine container received.
3. Make your final collection when you empty your bladder the next morning at the same hour as recorded above. Record this time and date (_____/____/____).
4. Keep the collected urine refrigerated, if possible, and bring it to the Laboratory as soon as possible after the 24-hour collection is completed.
5. Questions concerning the 24-hour urine collection should be directed to the Laboratory at 596-1509.

POSTMORTEM EXAMINATIONS

I. WARD PROCEDURES:

- A. Properly identify the body by attaching completed DA Form 8-219, one each, on hand and foot.
- B. SF 523A (Disposition of Body) should accompany the body to the holding area.
- C. **Perform no biopsies or tissue removal on wards.** If these are desired, notify the Chief of Anatomic Pathology.
- D. **In death cases which require an autopsy, the Ward Nurse will have all the records hand carried to the Pathology Service (USA MEDDAC Reg 40-12).** No autopsy will be performed without the chart. (See II below.)

II. **AUTHORIZATION FOR POSTMORTEM EXAMINATION:** The SF 523 is employed. The next of kin should not be approached regarding an autopsy until consultation between the attending physician and pathologist decide whether an autopsy is appropriate. A pathologist is available 24 hours a day by pager - contact the laboratory for the name, phone, and pager of the pathologist on call.

A. **ACTIVE DUTY PERSONNEL:** Forward HOSPITAL REPORT OF DEATH and the CLINICAL RECORD to Patient Administration Division during duty hours and to the AOD during non-duty hours. Autopsies may be performed on active duty personnel "by order of the MTF Commander" under certain circumstances. Permission may also be obtained from the next of kin as with any other patient.

B. **DEPENDENTS and Non-"Active Duty Military":** Witnessed signature of the LEGAL NEXT OF KIN is mandatory. Witnessed telephonic communication or telegrams may be legal forms of permission in lieu of signature. These must later be confirmed in writing. The AOD or Patient Administration Division determines the succession of next of kin. If there is any limitation specified in the authorization, it must be typed clearly on the SF 523. Consult the pathologist regarding limitations. If no limitations are specified, the word "NONE" will be entered in the appropriate space.

C. **Objections to autopsy by the next of kin or other relatives,** in cases where the MTF Commander or local coroner may order an autopsy, should be brought to the attention of the commander or coroner, the Patient Administration Division, and the pathologist.

D. **SPECIAL PERMISSION:** Permission from the next of kin for the removal of organs to be utilized for transplantation purposes must be clearly indicated on SF 523, and SF 523B must be completed. **This is a mandatory legal requirement.** There can be no exceptions.

III. MEDICOLEGAL AUTOPSIES:

A. Certain autopsies are required for medico-legal purposes, are done under legal or regulatory authority, and should not have permission requested of next of kin. General Leonard Wood Army Community Hospital physicians should request autopsies in all of the following cases through command channels, (next-of-kin will not be asked) seeking authority from the Hospital Commander, Post Commander, or civilian authority:

1. Trauma, suspected trauma, or toxic agents (drugs).
2. Death in active duty soldiers.
3. Death in a person under age 18.
4. Death in a person who is not an admitted hospital patient.

B. The physician should notify the Patient Administration Division if there is any question regarding whether or not a medicolegal autopsy is required.

IV. ABORTIONS, IMMATURE AND PREMATURE INFANTS AND FETAL DEATHS:

A. LIVE BIRTH:

1. Definition of Live Birth: Live birth is the complete expulsion or extraction from its mother of a product of conception (irrespective of duration of pregnancy) which, after such separation breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.
2. Any live birth is to be registered by completing the State of Missouri Division of Health form entitled "Certificate of Live Birth."
3. If an infant who fills any of the above criteria in the definition of live birth dies immediately or shortly after delivery, a Certificate of Live Birth and a Certificate of Death must be filled out.

B. FETAL DEATH AND ABORTION:

1. Definition of Fetal Death: Fetal death is death prior to complete expulsion or extraction from its mother of a product of conception. The death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. **Fetal death must be registered if the 20th week of gestation has been reached.** A Fetal Death Certificate must be filled out.
2. If the gestational age cannot be determined by the history or by the physical measurements, then a pathologist may be consulted.
3. When the criteria for registration of fetal death are fulfilled, the procedure for handling the body is the same as for that of an adult death.
4. Definition of Abortion: Abortion is presumed to have occurred if any two of the following criteria are present:
 - a. The length of gestation is less than 20 weeks.
 - b. The fetal size is less than 350 grams.
 - c. The fetal crown-heel length is under 28 centimeters.
5. Abortions are sent to the Laboratory as surgical specimens.

C. IMMATURITY AND PREMATURITY:

1. Immaturity is present if the infant fulfills any two of the following criteria:
 - a. Length of gestation is from 20 to 28 weeks.
 - b. Weight of the infant is between 350 and 999 grams.
 - c. Length of the infant is from 28 to 35 centimeters.
2. Prematurity is present if the infant fulfills any two of the following criteria:
 - a. Length of gestation is from 28 to 37 weeks.
 - b. Weight of the infant is from 1000 to 2499 grams.
 - c. Length of the infant is from 35 to 47 centimeters.

V. REPORTING PROCEDURES:

- A. Usually within 24 hours of an autopsy, a list of findings (PROVISIONAL GROSS DIAGNOSIS and CAUSE OF DEATH) are distributed by the Pathology Division. In unusual circumstances, it may take 48 hours.

B. The final diagnosis will be forwarded to appropriate services on completion of the autopsy protocol. Should more detailed information be desired, staff physicians are invited to examine the complete protocol.

SURGICAL PATHOLOGY/CYTOLOGY

The Anatomical Pathology Section is open from 0700 to 1600, Monday through Friday.

I. **PRINCIPLE:** All tissue, foreign bodies and similar substances, regardless of nature, must be submitted to the Laboratory for examination and report.

II. REQUEST PROCEDURES:

A. SF 515, Tissue Examination form, will be used in all cases where electronic order via CHCS is not available, i.e. inpatients.

1. All SF 515's will clearly indicate the **date obtained, the nature or source of the specimen, pertinent clinical information, pre and post-operative diagnoses and pertinent operative findings. Age, sex, and race** will be indicated in all instances. First day of last menstrual period will be included, when appropriate. The doctor must sign each SF 515. The stamp plate alone is not sufficient.

2. Assuming proper identification of specimens, one SF 515 suffices for multiple specimens removed from a patient on the same day.

3. Container labels must include the following information: Patient's name, sponsor's social security number, name or nature of tissue removed, and site of removal, as appropriate. (Labels must be on the container and not the lid.)

B. Electronically order **surgical pathology** by typing **Tissue Exam or TE** at the CHCS prompt "Laboratory Test". Follow the menu through filling in appropriate information. Multiple specimens on the **same** patient are distinguished by assigning A, B, C, etc. to each tissue, **not** separate orders for each tissue.

C. Electronically order **cytology** by typing **cyto** at the CHCS prompt "Laboratory Test". A pick list will appear. Choose either **cyto pap smears** or **cytologic non-gyn** for the specimen you are submitting.

III. SUBMISSION OF SPECIMENS:

A. Ward and Operating Room personnel will deliver specimens to the Histology section of the laboratory by 1230 hours. Specimens received later than 1300 hours may not be processed until the next day.

B. Biopsies and small tissues will be placed in 10% formalin unless special studies are to be performed, except for large specimens such as mastectomies, colectomies, or cystectomies, which are difficult to fix. Hand carry these large specimens to Histology fresh so that appropriate fixation may be done. Bring these specimens down immediately. Do not leave specimen sitting for long periods of time without fixative. This can destroy the tissue. Make sure to make personal contact with personnel in Histology to confirm fresh specimen.

C. Clinics which perform mucosal biopsies from the gastro-intestinal tract should fix all tissue in Bouin's solution **not** 10% buffered formalin. Contact the Histology division for any assistance at 596-9859.

BLOOD BANK SECTION

The Blood Bank Section, Pathology Division of General Leonard Wood Army Community Hospital is accredited by the American Association of Blood Banks (AABB) and the College of American Pathologists (CAP) and operates under the Food and Drug Administration (FDA) license of the U.S. Army Surgeon General. The procedures and policies of the Blood Bank are in accordance with the standards and regulations promulgated by these agencies. For a detailed and comprehensive description of the policies and procedures for the use of blood and blood products, blood management, and blood transfusion practices, refer to USA MEDDAC Pamphlet 40-7, Use of Blood and Blood Products, 24 Oct 2001.

CHEMISTRY SECTION

I. **GENERAL:** Specimens for chemistry procedures should be obtained in a fasting state (12-14 hour fast). If this is not practical, an "order comment" should be made in CHCS to verify this. Accuracy of results on a lipemic (most commonly caused by a non-fasting specimen) or hemolyzed specimen is questionable. It is also important to make the Chemistry Section aware of medications so that proper precautions can be taken to assure the best results. Close adherence to the information and instructions contained herein will insure more effective laboratory support and services by the Chemistry Section. Our laboratory personnel are as anxious to provide the highest quality patient support as the physicians who rely on it.

II. REQUEST FORMAT:

A. JCAHO and CAP Laboratory Accreditation Standards require that all chemistry specimens be labeled to identify the patient. The patient's name and social security number must be present on the specimen. **SPECIMENS NOT ACCURATELY LABELED WILL BE REJECTED.** Improper identification and labeling of specimens contribute substantially to inaccuracy and confusion to the detriment of the patient.

B. Consultation with the test index in this volume or with the appropriate section by telephone should be made if any doubt exists concerning the most suitable method for collecting specimens.

III. CHEMISTRY TESTS:

A. Blood Chemistry:

1. All blood chemistries are done on samples drawn in the fasting state (12 hours), except in emergencies. The fasting state means that food and drinks, except for water, are to be withheld from the patient. Water may be given, except when a gastric analysis, gastric wash or urinary concentrating ability test is to be done. If at all possible, all drug medications should be withheld from 24 to 48 hours prior to having blood drawn except for therapeutic drug monitoring. A minimum of 14 hours fast is necessary for triglycerides, HDL-cholesterol, and LDL-cholesterol.

2. In the analysis of therapeutic drugs, additional data on the patient will be helpful. When ordering a therapeutic drug in CHCS, the dose time will be asked and should be answered as accurately as possible in the Order Comment section.

B. Urine Chemistry:

1. Instructions and appropriate urine containers with required preservative for 24-hour urine collections are to be obtained at the laboratory front desk. A 24-hour urine test request that requires an acid preservative may be collected in conjunction with a 24-hour test that does not require any acid or other preservative if the specimen is refrigerated during collection and is brought to the laboratory immediately upon completion.

2. If at all possible, instruct patient to withhold all drug medications from 24 to 48 hours prior to timed-urine collection. For timed specimens, the patient should be instructed to empty the bladder upon arising in the morning of the starting day and discard that urine. All urine passed throughout the subsequent timed period is collected in the container provided and refrigerated. Upon arising the next morning, the patient completely empties the bladder and adds this urine to the container. This last specimen terminates the 24-hour collection and the urine collection is submitted to the laboratory. If a creatinine clearance test is requested, a blood creatinine specimen must be collected by the laboratory within the 24-hour time frame usually after termination of the collection. The patient's height and weight must be recorded on the instruction sheet. Complete instructions for collection and diet will be given at the time the collection container is procured.

3. Collection time for quantitative urine chemistry tests is of utmost importance in order to properly report urine chemistry results. It is essential to be able to distinguish 24-hour urine collections from those collections which are less than 24 hours. The volume of urine measured without any written indication of the collection period cannot be relied upon solely as a means of identifying the time interval of collection. In order to insure meaningful and accurate reporting, please indicate the time period of urine collection. All that is required is an indication such as "random", "spot", "2 hour", "12 hour", "24 hour", or other in the comment section of CHCS. Your attention to the matter will facilitate the initial processing and final reporting of urine chemistry tests.

C. Tests Performed by Reference Laboratories:

1. In addition to the test procedures performed within the laboratory, other tests are available from commercial laboratories and supporting military installations.
2. Questions not answerable by this manual concerning availability, collection, quantity of specimen required, and preservation should be referred to the Chemistry section supervisor before the specimen is collected from the patient.

D. Toxicology:

1. All **legal** urine drug screening specimens in which there is probable cause to suspect illicit drug use are to be referred with a proper chain of custody to the Drug and Alcohol Division, Building 310, Room 62-7, 596-0119, per FLW Regulation. Upon presentation in ER contact the soldier's unit drug representative (UADC) before sample collection.
2. **Medical** drug screens require a minimum of 50 mL of urine and do not require a chain of custody. These specimens are screened at FLW by immunoassay technology for cocaine metabolites, opiates, benzodiazepines, phencyclidines, barbiturates, cannabinoids, and amphetamines using recommended screening cut-off concentrations by the Substance Abuse and Mental Health Services Administration.

E. Blood Alcohol Analysis:

1. Blood alcohol (ethanol) drawn for medical reasons to assist the medical officer in diagnosis and treatment are to be drawn in a gray-top tube. A non-alcoholic disinfectant should be used to prepare the site of venipuncture. Do not use ethyl alcohol, isopropyl alcohol, acetone, or ether.
2. Blood alcohol drawn for medico-legal purposes and to be used for evidence must be collected and handled in the following manner:
 - a. Submit using USA MEDDAC FM 96 (Intoxication Examination and Determination) front and back (Chain of Custody).
 - b. Read and complete all applicable portions of USA MEDDAC FM 96.
 - c. Sterilize the site of venipuncture with a non-alcoholic preparation. Do not use ethyl or isopropyl alcohol, ether or acetone.
 - d. Draw 10 mL of blood into 3 gray-top vacutainer tubes containing sodium fluoride. Mix gently 6-8 times.
 - e. Label the tubes with the subject's name, social security number, date and time drawn, and phlebotomist. Venipuncture and labeling must be witnessed.
 - f. Place the specimen and all forms in a locked box and refrigerate until delivery can be made to the Chemistry Section.

g. Deliver to the Chemistry Section as soon as possible. Transfer to laboratory personnel by signing chain of custody. A laboratory technologist or technician familiar with the test procedure will sign as the last person on the USA MEDDAC FM 96 (Section V, Chain of Custody) and will immediately perform the analysis. Analysts will be verified using standards with controls and signed by a pathology officer (Section VI) and/or pathologist.

h. A continuous chain of custody with positive identification is of utmost importance. It must be insured that every step in handling and storage of the specimen up to arrival at the lab can be verified if challenged in a court of law.

i. If a blood alcohol is to be used for evidence, close correlation with the Judge Advocate General's office is advised. Refer to USA MEDDAC Regulation No. 40-9 (Sobriety Examinations and Blood Alcohol Determinations).

F. Fecal Fat (Quantitative): Containers for the quantitative fecal fat are available at the laboratory front desk. The referral laboratory requirements include a 24-hour timed stool specimen transported in a pre-weighed container.

G. D-Xylose Absorption Test:

1. Principle: Xylose is a pentose sugar not normally present in significant amounts in blood. When given orally in a normal fasting patient, it is passively absorbed in the proximal small intestine to about 60% and subsequently excreted by the kidneys. The amount of xylose recovered in the urine or blood in a specified time interval after administration of a measured dose is used to evaluate mucosal absorption ability. In malabsorption due to pancreatic insufficiency, the absorption of xylose will be essentially normal provided that there is no significant increase in intestinal motility. Over 80% of patients with malabsorption due to jejunal malabsorption show low values.

2. Patient Preparation and Specimen Collection (Adults):

a. Patient is instructed to fast overnight for 10 hours and during test period and withhold drug medication (if possible). Patient may have water to drink while fasting.

b. In the morning have the patient empty his bladder completely and discard this urine.

c. Give 25 gm of D-Xylose (or 5 gm if specified by physician) dissolved in 250 mL of water followed immediately by an additional 250 mL water to ensure a urine flow of greater than 60 mL per hour. **Note starting time** of urine collection.

d. Collect and pool all urine specimens voided during the next 5 hour period, including the 5-hour specimen. Refrigerate.

e. Patient may drink some water to wash down the xylose taste in the mouth but must not eat or smoke and should remain sitting at rest for the initial two hours.

f. After 2 hours, collect a blood sample in a gray-top tube.

3. Patient Preparation and Specimen Collection (Children):

a. Keep patient fasting overnight and during test period; infants are fasted for 4 hours.

b. In the morning, have the patient empty his bladder completely.

c. Give 0.5 gm of D-Xylose/pound of body weight, up to 25 gm, reducing the amount of water according to the weight of the patient.

- d. Collect and pool all urine specimens during the next 5-hour period.
 - e. Collect a blood sample in a gray-top tube 60 minutes after Xylose administration. The time of blood collection is different from that in adults because the peak of absorption in children is reached sooner.
- 4. A normal blood xylose level in the presence of decreased urine xylose excretion would suggest renal retention.
 - 5. Abdominal discomfort or diarrhea observed in some patients can be minimized by use of the 5 gm xylose dose.
 - 6. A number of common drugs show an apparent decrease of urinary xylose excretion,(e.g., Aspirin, Phenformin, Digitalis, Indomethacin, etc.).

HEMATOLOGY/COAGULATION/BLOOD GAS SECTION

I. TESTS PERFORMED: Complete Blood Count (CBC), Erythrocyte Sedimentation Rate (ESR), Westergren Sedimentation Rate (WSR), Sickle Cell Testing, Platelet counts, Reticulocyte counts, Eosinophil Count, coagulation testing, blood gas profile testing, body fluid cell counts and semen analysis testing.

NOTE: The CBC includes WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW, PLT, MPV, and electronic differential.

II. MANUAL DIFFERENTIAL: Manual differentials are performed upon request or whenever results meet one or more of the following criteria.

- A. WBC 3,000 or below, 20,000 or above
- B. Hemoglobin 9.0 or less, 18.0 or greater
- C. HCT 27% or less, 54.0% or greater
- D. MCV 70.0 or less, 105.0 or greater
- E. MCHC 32.0 or less, 37.0 or greater
- F. Platelet counts below 100,000 or above 700,000

III. PLATELETS: Platelets are counted on Coulter instrumentation and are accurate to within plus or minus 7%, over the range of 0 to 999,000 platelets per cubic millimeter. If a count is less than 50,000, a manual platelet count will be performed and reported through CHCS.

IV. COAGULATION TESTS: Prothrombin Time, Activated Partial Thromboplastin Time, Fibrinogen, D-Dimer and Bleeding Time.

NOTE: Refer to the following procedures before drawing coagulation samples.

A. Use **either**: A two syringe technique, with the **first** syringe having at least 1 mL of blood; the **second** syringe to be used for Coagulation Studies. 3.5 mL of blood is necessary for the plastic blue top tube; do not insert needle through stopper - remove needle from syringe and stopper from tube then fill tube with correct amount of blood. **OR** use a two vacutainer draw with a red top being the first tube and a blue top being the second tube drawn. Draw at least 1cc into the red top tube before completely filling the blue top tube.

B. Excessive trauma to venipuncture site should also be avoided. Minimal tourniquet pressure is required. Please remember: any problems with draw may affect the results; anti-coagulant contained in 3.5 mL blue top tubes is exact for 3.5 mL draw of blood - less than 3.5 mL will be inaccurate.

V. BONE MARROW: Contact hematology section prior to procedure to schedule technician assistance with making bone marrow slides.

VI. BLOOD GAS TESTING: Blood gas testing may be ordered on a STAT, ASAP, or Routine basis. The samples must, however, be handled correctly to ensure accurate results. Since arterial blood samples must be analyzed within 10 minutes if left at room temperature, the laboratory requires all samples to be placed in a mixture of ice and water before bringing the sample to the laboratory. Properly cooled samples must be analyzed within 1 hour to avoid sample damage. All blood gas samples must be quickly brought to the laboratory and given directly to a laboratory technician to avoid testing delays.

URINALYSIS

I. ROUTINE URINALYSIS:

A. Routine urinalysis can be done on a random specimen of urine, but the concentrated early morning specimen is preferable.

1. The "clean-catch" or "mid-stream" fraction of the specimen is best, particularly for female patients. Urine for culture must be collected in a sterile container. Samples collected in inappropriate containers will not be accepted.

2. Urine for routine examination should be sent to the lab **immediately** after collection in compliance with JCAHO and CAP regulations.

3. Urine microscopic are routinely performed when the sample is processed using the automated IRIS system. When processed manually, the urine microscopic is not performed unless specifically requested or one or more of the following is true:

a. Urine is cloudy or hazy.

b. Dipstick chemistries are positive for protein, blood or leukocytes.

4. Positive dipstick tests are confirmed by a second quantitative or semi-quantitative method:

Dipstick Test

Protein

Glucose

Ketones

Bilirubin

Confirmatory Test

Sulfosalicylic Acid (SSA)

Clinitest

Acetest

Ictotest

B. Routine urinalysis includes the following tests: Color, Appearance, pH, Specific Gravity, Protein, Sugar, Ketones, Urobilinogen, Occult Blood (free hemoglobin and RBC's), Bile, Nitrates, WBC Enzyme, and Microscopic analysis.

C. Clinitest determinations for total reducing substances are not routinely performed on all urine specimens from pediatric patients. The physician may request a clinitest determination whenever it is clinically indicated.

II. MYOGLOBIN TESTS are sent to reference lab for quantitation if screen for occult blood is positive.

III. URINE PREGNANCY HCG TEST is performed as a routine or STAT procedure at any time. A first morning specimen is preferred, however, the test may be done on a random sample.

MICROBIOLOGY

I. DESCRIPTION OF SERVICES: The Microbiology Laboratory is located within the main lab adjacent to the hospital lobby on the first floor. Normal duty hours are 0730- 1600, Monday through Friday. Laboratory personnel are available 24 hours a day, including weekends and holidays, to answer any question or assist in any way.

II. REQUEST PROCEDURES OTHER THAN CHCS ENTERIES:

A. Each specimen must be accompanied by at least one standard request form as indicated below. When single specimens are submitted for more than one procedure within disciplines of Microbiology (i.e., Bacteriology, Mycobacteriology, and Mycology), **an appropriate standard form must be submitted for each procedure.**

1. SF-553 (Microbiology I) - Bacterial Smear, Colony Count, Culture and Antibiotic Sensitivity Testing.
2. SF-554 (Microbiology II) - Mycology (Fungus Smear and Culture), Mycobacteriology (AFB or TB Smear, Culture and Sensitivity) and Viral Culture.
3. SF-552 (Parasitology) - Feces Gross Exam, Occult Blood, Qualitative Fat Stain, and Ova and Parasite Exam. (NOTE: Blood Parasites, i.e., Malaria examinations are performed in Hematology.)
4. SF-557 (Miscellaneous) - When in doubt about which form to use, clearly write out your request on the miscellaneous form.

B. Specimen request forms should include the following data:

1. Patient's name and identification number.
2. Clinic or ward.
3. Attending physician's name.
4. Date and time of collection.
5. Site of infection or anatomic site of collection **essential**.
6. Antibiotic therapy if on any.

C. The processing of specimens when the site of infection or anatomic site of collection is not indicated often leads to erroneous data which may be harmful to the patient.

D. Unacceptable specimens or slips will not be processed.

E. The clinical information or remarks sections of the request forms should be used when unusual circumstances, diagnoses, or pathogens are suspected. Unless noted, only routine lab methods will be used. Routine methods often fail to detect unusual pathogens, i.e., Tularemia, Brucellosis, etc. **The physician's failure to supply the above information may produce misleading data, for which he is responsible.** It may also cause infection of laboratory personnel through failure to alert them to potential pathogens.

III. BACTERIOLOGY:

1. Laboratory Protocol.

a. These specimens are cultured for aerobic and facultative anaerobic organisms. See below for anaerobic cultures. Negative cultures are incubated for 72 hours before reported as no growth. Positive cultures are reported to include organism(s) identification and the results of antimicrobial susceptibility testing, if applicable.

b. **Transport specimens to the laboratory as soon as possible after collection.** For best results, syringe and needle aspirates must be processed within 30 minutes after collection. Specimens collected in the "Port-a-Cult" Anaerobic Transport System should be processed as soon as possible after collection also. However, the Port-a-Cul Transport System will maintain viability of anaerobic organisms for 72 hours. Because of this capability, anaerobic specimens are best processed between 0730 and 1600 hours when the regular microbiology technicians are working.

B. **Anaerobic Cultures-** See respective microbiology test for information.

C. **Blood Cultures-** See respective microbiology test for information.

D. **Cerebrospinal Fluid** - See respective microbiology test for information.

E. **Body Fluids** – See respective microbiology test for information.

F. **Environmental Cultures/Sterility cultures-** Contact Microbiology Division for instructions at 596-9866

G. **Ear Culture-** See respective microbiology test for information.

H. **Eye Cultures-** See respective microbiology test for information.

I. **Gonorrhea (GC) Culture** -See respective microbiology test for information. Also see Genprobe® testing.

1. Microscopic demonstration of gram negative, intra-cellular Diplococci in smears of urethral exudate from **men** constitute sufficient basis for a diagnosis of Gonorrhea. These types of smears are not recommended for the diagnosis in women except as an adjunct to cultures.

J. **Herpes Culture** – Contact specimen processing in the Chemistry division at 596-9863

K. **Nasopharyngeal/Throat Cultures** -See respective microbiology test for information.

L. **Smears/Slide Preps**

1. Darkfield Exams: All requests for Darkfield Exams should be referred to the Preventive Medicine Service at 6-9468.

2. Gram Stain, Wet Prep, Pinworm, and KOH -See respective microbiology test for information.

M. **Stool/Anal Cultures** - See respective microbiology test for information.

1. Notify Microbiology if special considerations are needed.

N. **Sputum** - See respective microbiology test for information.

O. **Tissue/Biopsy Cultures** - See respective microbiology test for information.

- P. **Urine Cultures** - See respective microbiology test for information.
- Q. **Vaginal, Group B Screen** - See respective microbiology test for information.
- R. **Vaginal/Genital Tract Cultures** - See respective microbiology test for information.
- S. **Viral Cultures** - See respective microbiology test for information.
- T. **Wounds, Abscesses, Exudates and Transudates** – See respective microbiology test for information.

1. Culture and colony counts are done on all urine specimens. Clean catch urines having colony counts less than 5,000/mL are reported as negative. Colony counts greater than 5000/mL - 10^5 /mL are considered positive, and are reported as such, the extent of identification and the performing of a sensitivity depends on the organism and colony count. Catherized urines are reported positive, if counts are 500/mL or greater.

2. Regardless of the colony count, routine cultures which demonstrate three or more organisms, are felt to be contaminated, and another clean catch mid- stream specimen should be requested as soon as possible. Urines that show diphtheroids, alpha hemolytic streptococci or lactobaccilli, will be identified as such, but not be worked up, expect upon request or repeat of same results on follow-up specimen.

- R. **Vaginal/Genital Track Cultures** - See respective microbiology test for information.

IV. **NEISERRIA GONORRHOEAE AND CHLAMYDIA GENEPROBE®** - See respective microbiology test for information.

V. **FUNGI (REFERENCE LAB) Brooke Army Medical Center (BAMC)**

A. **Specimen Collection, General:** Clinical specimens collected for examination and culture of molds and yeasts may generally be obtained in the same manner as bacterial specimens (see Section "III.A." above) with the following noted exceptions.

- 1. Aspirated materials, bone marrow, blood, body fluid, bronch wash, scrapings, and surgically removed tissues are essential, and are far superior to swabs for culture purposes.
- 2. When swabs cannot be avoided, they must be immediately transported to the Lab for processing in order to preclude drying of the specimen.
 - a. **Do not break the capsule in the routine culturette. The fluid in the capsule may be inhibitory to some fungi.**
 - b. An alternate way to submit would be to place the sterile swab in a sterile screw-cap 50 ml conical tube containing 0.5 mL of sterile saline.
- 3. Cerebrospinal fluid: A optimum volume of 5 mL of CSF is essential for culture purposes. If less volume is used less than adequate results will be obtain. Those circumstances where 5 mL can not be obtained, submit what is available.
- 4. Hair, nail clippings, and epidermal scrapings.
 - a. These specimens should be transported in sterile specimens cups or 50 ml sterile conical tubes - **never in rubber stoppered tubes.**

b. The Specimen Comment section of CHCS(the Clinical Remarks Section of request forms) should clearly indicate what mycotic infection is suspected. **Only in this manner can proper examination be guaranteed.**

B. Specific Specimen Collection.

1. Superficial and cutaneous mycoses:

- a. Hairs may be plucked with sterile forceps.
- b. Epidermal scrapings may be obtained with a sterile scalpel blade. Collect the scrapings from the active borders of the lesions.
- c. Readily crumbled material may be removed from under nails or clipped from the distal border.

2. **Subcutaneous mycoses:** Collect crusts, exudates, aspirated abscess material, and surgically removed tissue.

3. **Maduromycoses:** The agents of maduromycoses characteristically produce chronic suppurative lesions with multiple draining sinus tracts that exude pus-containing granules of variable size and color.

a. Macroscopic and microscopic examination of these granules is extremely helpful to the laboratory diagnosis of maduromycosis.

b. Pus should not be collected on a swab.

c. Aspirated exudate should be collected in a sterile container and immediately transported to the Lab.

d. Clinical notes on the request form should clearly indicate the specimen is for examination of suspected agents of maduromycosis.

4. **Keratomycoses:** The laboratory diagnosis of keratomycosis is dependent upon close cooperation between the Ophthalmologist and the Microbiology Section Supervisor at 6-9866.

a. Direct examination of corneal fragments scraped from the base and margins of the ulcer with a platinum spatula is the first step in the identification of possible mycotic involvement.

b. Such scrapings should be examined by KOH, wet mount, Giemsa stain (not done in Microbiology), and gram stain.

c. Eye contacts can be submitted in sterile containers.

5. **Systemic Mycoses:** Although respiratory secretions represent the majority of specimens collected for the agents of systemic mycoses, disseminated diseases may necessitate collection of fluids, exudates, or tissues from most any organ, orifice, or system of the body.

a. Special culture media are utilized when the agents of systemic mycoses are suspected.

b. Indication of suspected systemic agents on the request form is essential to ensure proper handling of these specimens in the Lab.

C. General Laboratory Protocol.

1. All fungal cultures are forwarded to Brooke Army Medical Center (BAMC) for definitive isolation and definitive identification.
 - a. Most specimens are examined grossly and with microscopic wet mount/KOH for the presence of fungal elements.
 - b. Cultures for fungal agents may not always be necessary if the diagnosis can be made from microscopic examination of the specimen.
 - c. Negative cultures are incubated 6 weeks before being reported as negative. (Some cultures may be held longer.) This does not include time to transport or generate and send reports.
 - d. Interim telephonic and written reports are/can be rendered.

VI. PARASITOLOGY (REFERENCE LAB)

A. Specimen Collection. The usual diagnostic stages of intestinal parasites are the eggs and larvae of Helminths and the trophozoites and cysts of protozoans. Fecal specimens are most commonly collected. Hard, formed stools are not acceptable for ova and parasite (O & P) analysis. Only soft formed, soft unformed, and diarrhea type stools will be accepted. A Giardia antigen test is performed on stool specimens which have an ova and parasite exam ordered. If the Health Care Provider (HCP) requests a full (O & P) exam the specimen is sent to a reference lab. Such requests are subject to review by the Pathologist.

B. Preservation of Specimens. Specimens obtained for parasites should be processed as soon after collection as possible. When undue delay is anticipated or incurred, the following methods of preservation are available, stool specimens are held for 7 days after antigen testing for possible referral for (O & P) exam.

1. Refrigeration.
 - a. **Formed stool specimens** rarely contain demonstrable numbers of trophozoites and, therefore, may be refrigerated overnight to preserve the cyst form of protozoans and ova, larva, and adult forms of Helminths.
 - b. **Diarrheal stools** should not be refrigerated, since this type of stool is more likely to contain viable trophozoites and ova of Trichuris trichuria.
 - c. **Sputum** collected for possible Paragonimus ova may be refrigerated but not when collected to demonstrate trophozoites of E. histolytica.
2. 10% buffered formalin is used for Giardia antigen testing and (O &P) analysis.
3. PVA (Polyvinyl Alcohol).
 - a. PVA solution is supplied by the Microbiology Lab to be used to preserve the trophozoite and cyst stages of Protozoans for permanent stain preparations. (Departments who frequently order specimens for parasite exam should order their own supply of PVA Solution.)
 - b. Add 1 part stool to 3 parts PVA in a small bottle and mix well. **DO NOT REFRIGERATE.**
 - c. Small amounts of material obtained by sigmoidoscopy, aspiration from extra-intestinal lesions, or from the urogenital tract may be mixed with 3 parts PVA on a glass slide.

d. Spread (do not smear as a blood film) the mixture with an applicator stick across the middle third of the slide.

C. Specimens

1. Feces:

a. The preferred method of stool collection for ova and parasites is the use of the PVA vial that is obtained from the laboratory.

b. Bottles containing a measured amount of PVA solution are obtained from the laboratory. These bottles contain a clear solution and a small plastic spoon attached to the lid. Use the spoon attached to the cap to pick up a portion of the stool equal in size to a marble one-half inch in diameter. Be careful not to put too much stool in the container.

c. For formed stool, add sufficient stool to raise the fluid level in the bottle to the level of the arrow on the bottle label. For loose, liquid, or diarrhea stools, raise the fluid level to the top of the label.

d. Thoroughly mix the stool sample and fluid in the bottle with applicator sticks by pressing the stool particles against the side of the bottle until all parts of the stool come in contact with the fluid.

e. Recap the bottle making certain that the top is on tight and shake well - at least 20 times. Store the bottle at room temperature. The specimen is now preserved and will keep for several weeks.

f. Write the patient's name and the date the specimen was collected on the label of the bottle and deliver it to the laboratory as soon as possible.

g. This method preserves all trophozoite and cyst forms of protozoans which may be difficult to visualize in a fresh specimen even under the best conditions.

h. If fresh whole fecal specimens are collected, they should be transported to the laboratory **within 1 hour** of passage. (The time of passage **must** be indicated on the request form to prevent old specimens from being **erroneously reported as "negative"**.)

i. Three normally passed stools, collected over a 3-5 day span, are the preferred specimens. Ideally, specimens should be collected every other day because intestinal parasites are not generally shed on a daily basis.

j. Specimens may be collected directly in plastic cups or from **dry** bed pans, sheets of paper, or diapers.

k. **Specimens must not be contaminated with urine or collected from toilet water** (Invalidates results).

l. The demonstration and identification of intestinal parasites is greatly inhibited if feces are collected during times when the patient is taking antacids, anti-diarrheal compounds, antibiotics, mineral oils, or compounds containing barium, bismuth, or magnesium.

m. Specimens should be transported at ambient temperatures but protected against extreme changes in temperature.

2. Diarrheic Stool:

a. All diarrheic specimens from patients with suspected amebiasis should be examined in the laboratory as soon as possible after passage.

- b. If immediate examination is not possible, place a portion of stool in PVA preservative.

3. Follow-up Specimens; When appropriate:

- a. Protozoan infections. 1, 3, and 6 **months** post-treatment.
- b. Helminth infections (except tapeworm). 1 and 2 **weeks** post-treatment.
- c. Tapeworm infections. 3 and 6 **months** post-treatment.

4. Duodenal Contents:

- a. Duodenal contents are occasionally collected to demonstrate the trophozoites of Giardia, the larvae and ova of Strongyloides, the ova of hookworms, and to differentiate Fasciola from Fasciolopsis infection.
- b. Duodenal contents should be examined immediately after collection or preserved in PVA (for Protozoans) or formalin (for Helminths).

5. Extra-intestinal Lesions:

- a. Fluids from extra-intestinal lesions (i.e., liver abscess) are occasionally collected.
- b. The white-to-yellow fluid from the center of lesions usually do not contain organisms. Collect the brown-to-red material from the periphery of the lesion for immediate examination or preserve in PVA.

6. Perianal Specimens:

- a. Perianal collections are obtained for the laboratory diagnosis of pinworm.
- b. Three consecutive daily collections are recommended.
- c. Specimens should be obtained a few hours after the patient has gone to bed or in the early morning prior to bowel movement or bath.
- d. Specimens with clear cellulose tape and glass slide or adhesive plastic paddles are **not acceptable**. Use the commercially available pinworm paddle available from Pediatrics or Supply. **Whole fecal specimens for pinworm examination are not acceptable. Pinworm specimens are sent to a reference lab.**

7. Sputum:

- a. Sputum may be collected to demonstrate extra-intestinal amebiasis or the ova of Paragonimus westermani.
- b. Paragonimus ova are most often found in sputum containing brown or rusty colored specks seen in streaks of blood.
- c. Entamoeba histolytica trophozoites may be confused with the trophozoites of E. gingivalis which are normally found in the mouth. (Instruct patient to rinse his/her mouth with 3% Hydrogen Peroxide prior to collection of sputum.)

8. Urogenital Specimens:

a. Vaginal swabs or scrapings (with sterile, unlubricated speculum), urethral swabs and exudates, prostatic secretions, and urinary sediment (from first portion of first morning void) may all be examined for *Trichomonas vaginalis*.

b. If immediate wet mount examination is not possible, place the swabs, scrapings, secretions, or sediment in 0.5 ml of saline for rapid transport to the lab.

c. Urine is often collected to demonstrate the ova of *Schistosoma hematobium* and *Trichomonas vaginalis*.

d. The last few drops of the void are recommended for *Schistosoma hematobium*. (Some authors also specify noon or midnight collections rather than the first morning voided specimen.)

9. **Blood:** Refer to Hematology Procedures.

VII. RICKETTSIAL DISEASES (REFERENCE LAB) See Specimen Processing Section.

VIII. **TUBERCULOSIS (REFERENCE LAB)** All specimens for mycobacterial evaluation are forwarded to Brooke Army Medical Center (BAMC).

A. Specimen Collection:

1. **Blood and feces;** Contact Microbiology Division at 596-9866.

2. CSF:

a. Submit in sterile screw cap tube found in spinal tap tray. 3-5 ml is optimal, reduced amounts are acceptable but may affect results.

b. The more fluid able to be submitted for culture, the greater the likelihood of detecting the organism.

3. Gastric Lavage:

a. Should be collected in sterile cup before dental toilet and/or breakfast.

b. Send to laboratory ASAP so the gastric acid can be neutralized.

c. Gastric lavage is no longer recommended as a routine procedure because of the presence of acid fast organisms normally present from various environmental sources in food and drink.

4. Smears:

a. A stain for acid-fast bacilli is part of the AFB panel.

5. Sputum:

a. Collect in sterile cups without preservative.

b. Collect only early morning specimens before dental toilet and/or breakfast.

c. **Do not** collect 24 hour specimens. They are not acceptable.

d. Early morning specimens on 3 successive days are more informative than 3 specimens collected on the same day.

6. Tissue Specimens:

a. Transport in sterile container with a small amount of sterile (preservative free) saline.

b. **DO NOT USE CULTURETTES.**

7. Urine:

a. All of first morning specimen in sterile cup without preservative is sent to the laboratory.

b. **24 hour** collections are **not** acceptable.

B. Laboratory Protocol.

1. Specimens are forwarded to Brooke Army Medical Center (BAMC).

2. Negative culture reports are rendered after **8 weeks** incubation, allow time for transportation and issuing of reports.

3. Identification and drug susceptibility testing are performed on all acid-fast organisms isolated. These take from **3-8 weeks** after initial isolation depending on the organism encountered.

IX. VIRAL CULTURES (REFERENCE LAB) – Specimen Processing (Chemistry Division)

A. Viral cultures require special transport media.

1. The necessary transport media may be obtained from the Specimen Processing Section.

2. Suspected lesions should be swabbed and the swab then placed into the transport media.

3. The tube of media should be labeled properly and transported to the lab.

4. Order in CHCS

B. Special viral cultures should be coordinated with the Specimen Processing Section.

X. OCCULT BLOOD – See respective microbiology test for information.

A. Stool

B. Gastric specimens are not performed using stool occult blood procedures, may affect results and are not approved by the Food and Drug Administration. Such specimens are referred if definitive results cannot be rendered.

SEROLOGY

I. DESCRIPTION OF SERVICES:

A. The Serology Laboratory is located with the Microbiology Section of the Laboratory.

B. Normal duty hours are 0730-1600 hours, Monday through Friday, except holidays.

II. REQUEST PROCEDURES:

A. Paired sera (acute and convalescent phase) are required for some follow-up serologic monitoring of disease conditions, e.g., viral neutralization tests and some independent serological procedures.

B. Acute phase sera are collected within the first 48 hours of onset. Convalescent sera are usually collected 14-21 days after onset.

C. Tests performed by Microbiology (other test refer to Chemistry or Specimen Processing). See respective microbiology test for information.

TEST	TUBE
ASO (Anti-Streptolysin O) Latex Screen	Small red top
Giardia Antigen	Stool, 10% buffered formalin
H. pylori	Small red top
Hetero Mononucleosis (Mono)	Small red top
RF (Rheumatoid Arthritis)	Small red top
RPR (Rapid Plasma Reagin	Small red top
Rubella Screen	Small red top
RSV Antigen	Nasal pharangeal swab, aspirater or washes
Varicella IgG	Small red top

D. Quantitations can be performed on ASO, RF and RPR.

E. Quality test need to be ordered first or patient must be previously positive for quanitative work-up. If patient previously positive, please comment when ordering in CHCS.

CONSOLIDATED TROOP MEDICAL CLINIC (CTMC)

I. GENERAL POLICIES:

A. Laboratory Hours: Monday through Saturday 0630 – 1500 hours

B. Laboratory Test Request Procedures: Tests may be requested through the CHCS system or by MEDDAC Form 819. The patient is sent to the laboratory for specimen collection. Tests requested on MEDDAC Form 819 will be entered into the CHCS system as soon as the test is completed.

C. Laboratory Test Results Procedures: All tests are resultd through the CHCS system. During times when the CHCS system is inoperative results may be reported using the test request forms. Results will be entered into the CHCS system as soon as the system is operative. Pathology alert test or critical results will be called to or personally delivered to the requesting health care provider, and the notification information will be recorded in the CHCS system.

D. Laboratory Tests Available: Most routine testing available from the main laboratory can be ordered and collected at the CTMC. It is, however, necessary to make prior arrangements for collecting specimens for all special testing since these tests will be shipped to the main laboratory, and whenever groups of patients greater than 5 people are to be processed as a single group. Those tests which can be processed by the laboratory at the CTMC are listed below.

E. Courier transport of laboratory samples from CTMC to Main Laboratory: 1300 hours daily. Special arrangements for delivery may be made when required.

II. LABORATORY TESTS PERFORMED AT CTMC:

A. Hematology Tests

1. CBC: The CBC includes the parameters WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, RDW, PLT, MPV, and the electronic differential.
2. Manual Differential
3. ESR
4. Sickle Cell Screen

B. Urinalysis Tests

1. Urinalysis
2. Urine Microscopic
3. Urine Pregnancy Test

C. Microbiology Tests

1. Gram Stains
2. Specimens for culture, parasite screening using stool samples, or smears for fecal leukocytes are sent to the main lab.
3. KOH
4. Wet Preps
5. Fecal leucocytes
6. Occult Blood

D. Serological Tests

1. Test for infectious mononucleosis

E. Chemistry Tests

1. Chem 8 Test to include the following parameters: Glucose, BUN, Creatinine, BUN/Creatinine ratio, Sodium, Potassium, Chloride, ECO₂, Calcium, Anion Gap, OSMO Calculation
2. CPK
3. Qualitative serum HCG

CRITICAL VALUES

Chemistry

GLU	<40 or >450 mg/dL
BUN	>80 mg/dL
Creat	>3.5 mg/dL
Na ⁺	<120 to >158 mmol/L
K ⁺	<2.8 or >6.2 mmol/L or >8.0 for hemolysis
Cl ⁻	<75 to >126 mmol/L
CO ₂	<11 to >40 mmol/L
Uric Acid	>13 mg/dL
Mg	<1 or >4.9 mg/dL
Phos	<1.2 or >8.9 mg/dL
TBil	>15 mg/dL
NeoBil	>5 mg/dL at birth to 24hrs >18 mg/dL after 24 hours
Lactate	>3.4 mmol/L
Ammonia (NH ₃)	>50 umol/L
Theo	>25 ug/mL
Ca	<6 or >13 mg/dL
CSF Glucose	<37 or >438 mg/dL
Serum Osmo	<250 or >326 mOsmo/kg
Salicylate	>300 mg/L
Acetaminophen	>150 ug/mL 4 hrs after intake >50 ug/mL 12 hours after ingestion
Carbamazepine	>20 ug/mL
Digoxin	>2.5 ng/mL
Gentamicin	>12 ug/mL (peak) AND >1 ug/mL (trough)
Lithium	>1.5 mmol/L
Phenobarbital	>60 ug/mL
Phenytoin	>40 ug/mL
Procainamide	>12 ug/mL
Quinidine	>10 ug/mL
Salicylate	>300mg/dl
Theophylline	>25 ug/mL
TCA	>400 ng/mL
Valproic Acid	>200 ug/mL
Vancomycin	>60 ug/mL
MI Criteria: CK	>65 U/L
CK-MB Mass	>5 ng/mL
CK-MB Index	>4%
Troponin I (plasma)	>0.4 ng/mL

Hematology

WBC	<2.0 or >37.0 thou/cumm
HGB	<6.6 or >19.9 g/dl
HCT adults and children	<20.0 or >61.0 %
Manual HCT on Newborns	<33 and >71 %
Platelet Count	<50 or >910 thou/cumm
Blasts	One or more %
Atypical Lymphocytes	>15 %
PT INR	>5.0
PTT	>100.0 seconds

Fibrinogen	<90 or >775
New diagnosis of leukemia	
Urine glucose	≥1000 mg/dL with 4+ Clinitest
Clinitest	4+
Presence of cystine, tyrosine or leucine crystals	
CSF WBC count	>10 /cumm

CRITICAL VALUES

Adult Arterial Blood Gas

pH	<7.21 or >7.59
pCO ₂	<19 or >67
pO ₂	<43
tHb	<6.6 or >19.9
CoHb	>20.0%
MetHb	>30.0%
SO ₂	<75%

Microbiology

Positive Body Fluids/gram stain
 Positive spinal fluid (CSF)/Gram stain
 Positive blood culture/Gram stain
 Methicillin-Resistant Staph. Aureus (MRSA)
 Stool Pathogens, including E. coli 0157
 Positive donor eye cultures
 Penicillin-resistant Streptococcus pneumonia
 Positive Group A screen is reported to the patient phone line
 Positive Group B screen is reported on OB patients
 Positive RPR on OB patients
 Vancomycin-Resistant enterococci (VRE)

Infectious/communicable diseases are reported to Preventive Medicine

HOW TO USE THIS SECTION OF THE LABORATORY MANUAL

Each laboratory procedure is presented in a standardized format. Procedures are listed alphabetically, with extensive cross-referencing. The comprehensive list of procedures includes all tests performed by the Pathology Division, as well as the name of those tests performed at Reference Testing Sites. Look up the name of the test for which you require information in the index. Then refer to the page listed by that test along with the test name reference. Each individual test description provides as many as 23 categories of test specific information, including:

- 1. Test Name**
- 2. Synonyms**
- 3. Definition***
- 4. Test includes***
- 5. Department**
- 6. Request Method**
- 7. Availability**
- 8. Turnaround Time**
- 9. Special Instructions**
- 10. Cost**
- 11. Specimen Type**
- 12. Specimen Volume**
- 13. Specimen Minimum Volume**
- 14. Container**
- 15. Collection**
- 16. Storage**
- 17. Patient Preparation**
- 18. Causes for Rejection**
- 19. Patient Aftercare***
- 20. Normal Range**
- 21. Comments**
- 22. Use**
- 23. Limitations***

*** Indicates Optional Field, included only when applicable.**

- 1. Test Name** – The name by which the test is known and alphabetized.
- 2. Synonyms** – Alternate names by which a test may be known. Synonyms appear in the Alphabetical/Cross-Reference Index for convenience in locating a test by an alternative name.
- 3. Definition** - Detailed description of a test.
- 4. Test Includes** – Procedures included within the named test.
- 5. Department** – The laboratory department where the test is performed or processed for reference testing.
- 6. Request Method** – Request method or forms to be used to order a procedure. (Usually request method is CHCS, however some tests may require additional Forms)
- 7. Availability** – Time interval that a specimen is tested or processed.
- 8. Turnaround Time** – the approximate time for the test procedure to be completed.
- 9. Special Instructions** – Additional specific requirements associated with a particular test.
- 10. Cost** – the cost of the procedure.

- 11. Specimen Type** – The specific specimen required
- 12. Specimen Volume** – The volume of specimen material collected to perform a particular test.
- 13. Specimen Minimum Volume** – The minimum volume of specimen material needed to perform a particular test
- 14. Container** - Type of container or Color-coded container (includes appropriate preservative, anticoagulant, or other medium) into which specimens are to drawn, stored or transported.
- 15. Collection** – Specific information regarding the collection of a specimen.
- 16. Storage** – Indications for storage and/or transport designed to maintain specimen material.
- 17. Patient Preparation** – Patient considerations that should be given prior to the collection of specimen. Intended to promote optimum conditions for testing.
- 18. Cause for Rejection** – Circumstances related to specimen quality under which the Department of Pathology believes accurate results cannot be obtained on the specimen material submitted.
- 19. Patient Aftercare** – Patient care considerations that follow the collection of a specimen or performance of a diagnostic procedure.
- 20. Normal Range** – Reference value established for a particular test procedure.
- 21. Comments** – Additional information which may contribute to the interpretation or utilization of the test.
- 22. Use** – Particular use of the procedure and suggestions for applications in clinical settings.
- 23. Limitations** – Limitations of a test method.

11-DEOXYCORTICOSTERONE (N) *shipped to outside facility for testing*

11-DEOXYCORTISOL (N) *shipped to outside facility for testing*

17-HYDROXYCORTICOSTEROIDS PANEL (N) *shipped to outside facility for testing*

17-HYDROXYPROGESTERONE (B) *shipped to outside facility for testing*

17-KETOSTEROIDS, 24 HOUR PANEL (N) *shipped to outside facility for testing*

18-HYDROXYCORTICOSTERONE (N) *shipped to outside facility for testing*

5 HIAA QUANTITATIVE (N) *shipped to outside facility for testing*

5' NUCLEOTIDASE (N) *shipped to outside facility for testing*

ABO/RH TYPING

SYNONYMS ABO group/Rh type; Type, Blood; Blood Type

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF 556
Availability: Daily. **Turnaround time:** STAT-within 1 hour; ASAP-within 2 hours; ROUTINE- 4-24 hours
Special instructions: N/A **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 7mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, Date and time of collection and Phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** N/A **Causes for Rejection:** Mislabeled specimen or SF518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION **Normal Range:** N/A **Comments:** N/A **Use:** To determine blood types for transfusion; prenatal screening; cord blood testing and military personnel records/ ID cards.

ACETAMINOPHEN

SYNONYMS Tylenol; APAP; Anacin-3; Datril; Liquiprin; Panadol; Panex; Tempra

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours
Special Instructions: Indicate time of ingestion on slip. **Cost:** \$46.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Transport to laboratory as soon as possible **Patient Preparation:** Drug levels for therapeutic monitoring should be drawn at appropriate time intervals after medication has been given, 30 - 60 minutes post-oral dose. **Causes for Rejection:** Improperly labeled specimen; grossly lipemic; hemolyzed specimen.

INTERPRETATION **Normal Range:** Toxic if greater than 150 ug/mL at 4 hours or greater than 50 ug/mL at 12 hours. Therapeutic Range: 10 - 30 ug/mL **Comments:** Collecting samples for peak values before 4 hours post-injection may lead to false interpretation. **Use:** Therapeutic monitoring; evaluate acetaminophen toxicity.

ACETYLCHOLINE RECEPTOR BLOCKING ANTIBODY (N) *shipped to outside facility for testing*

ACID FAST CULTURE PANEL (S) *shipped to outside facility for testing*

ACTH (B) *shipped to outside facility for testing*

ADULT ALLERGY SCREEN (N) *shipped to outside facility for testing*

ALBUMIN, SERUM

SYNONYMS Alb

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557; **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** Preferred fasting **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Marble red or green top **Collection:** Routine venipuncture **Storage:** Separate and refrigerate specimen after processing **Patient Preparation:** N/A **Causes for Rejection:** Marked hemolysis; moderate to marked lipemia; improperly labeled specimen.

INTERPRETATION Normal Range: 3.5 - 5.0 g/dL **Comments:** Albumin is the principle osmotically active component of plasma. As the major plasma protein, albumin acts as a nitrogen pool. **Use:** Evaluation of nutritional status, blood oncotic pressure, evaluation of renal disease with proteinuria, and other chronic diseases.

ALDOLASE (BAMC) *shipped to outside facility for testing*

ALDOSTERONE (BAMC) *shipped to outside facility for testing*

ALDOSTERONE, 24 HOUR URINE PANEL (N) *shipped to outside facility for testing*

ALK PHOS FRACTIONATION PANEL (N) *shipped to outside facility for testing*

ALKALINE PHOSPHATASE

SYNONYMS Phosphatase, Alkaline; ALP

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Elevated values expected during infancy and childhood. **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 1 mL **Container:** Red or green top tube, or red top microtainer tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Adults: 38 - 126 U/L, Children are generally 2 to 3 times greater than adult values. **Comments:** The high level of ALP in childhood results from an increase in bone fraction. **Use:** Elevations occur 2 to 4 hours after a fatty meal, in bone growth, healing of a fracture, acromegaly, osteogenic sarcoma, liver or bone metastases, leukemia or myelofibrosis. Alkaline phosphatase is used as a tumor marker.

ALPHA-1-ANTITRYPSIN (BAMC) *shipped to outside facility for testing*

ALPHA-FETOPROTEIN TUMOR (A) *shipped to outside facility for testing*

ALT

SYNONYMS SGPT; Alanine Aminotransferase, Glutamic Pyruvate Transaminase; GPT

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: Preferred fasting **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Process within 1 hour or store at 4 degrees C for up to 72 hours **Patient Preparation:** Preferred fasting **Causes for Rejection:** Gross lipemia; hemolysis; improperly labeled specimen.

INTERPRETATION Normal Range: Male 21-72 U/L and Females 9 - 52 U/L **Comments:** Avoid prolonged exposure to RBC's. Males have higher amino-transferase activity. **Use:** Primary use in diagnosis of Liver Cell Necrosis of any cause, severe shock, right heart failure, extensive cirrhosis, obstructive jaundice, liver tumors, muscular dystrophy; occasionally in hemolytic disease and pre-eclampsia.

AMINO ACIDS SCREEN, PLASMA (N) *shipped to outside facility for testing*

AMINO ACIDS, QUALITATIVE, URINE (N) *shipped to outside facility for testing*

AMINO ACIDS, QUANTITATIVE, PLASMA (N) *shipped to outside facility for testing*

AMIODARONE(N) *shipped to outside facility for testing*

AMMONIA

SYNONYMS N/A

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 -24 hours.
Special Instructions: Must be collected in Lithium or Sodium Heparin Anticoagulant and immediately placed in ice and delivered to laboratory. Fill tube completely and keep tightly stoppered at all times. Test must be performed within 30 minutes. **Cost:** \$30.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Green top tube (Lithium or Sodium Heparin) **Collection:** Routine venipuncture **Storage:** Must be analyzed immediately **Patient Preparation:** N/A **Causes for Rejection:** Incorrect collection; untimely delivery of specimen to laboratory, greater than 30 minutes; improperly labeled specimen.

INTERPRETATION Normal Range: 9 - 33 umol/L, Panic Value > 50 umol/L **Comments:** N/A **Use:** Ammonia is elevated in the following conditions: Liver disease, urinary tract infection with distention and stasis, Reyes syndrome, and inborn errors of metabolism; indicated in neonates with neurological deterioration, subjects with lethargy and/or emesis not explained, and in patients with possible encephalopathy.

AMNIOTIC FLUID ANALYSIS – Specimens are shipped to Phelps County Hospital for Testing.

SYNONYMS Phosphatidylglycerol, PG, AmnioStat, Fetal Lung Maturity

AMPHETAMINES CONFIRM (N) *shipped to outside facility for testing*

AMYLASE

SYNONYMS N/A

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 14.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Room temperature 4 days; 4 degrees C for 1 month
Patient Preparation: Preferred fasting **Causes for Rejection:** Improper labeling of specimen.

INTERPRETATION Normal Range: 30 - 110 U/L **Comments:** Amylase is a group of enzymes from the exocrine pancreas. Oxalate or citrate depress results. Lipemic sera may contain inhibitors which falsely depress results. **Use:** Work up for abdominal pain, epigastric tenderness, nausea and vomiting. Such findings characterize acute pancreatitis as well as acute surgical emergencies such as gastrointestinal perforation or bowel infarct. Amylase is used in the differential diagnosis of acute or chronic pancreatitis which may or may not, in an individual, be related to alcoholism.

AMYLASE (2-4 HR URINE)

SYNONYMS N/A

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Must be a timed and measured specimen. A 24 hour specimen kept on ice or refrigerated is preferred.
Cost: \$ 14.00

SPECIMEN Type: Urine **Volume:** Amount of urine voided in 2 - 4 hour **Minimum Volume:** Same **Container:** 24 hour urine container **Collection:** 2-4 hour urine collection **Storage:** Refrigerate during and after collection period **Patient Preparation:** Instruct the patient to void at 0800 and discard the specimen. Then collect all urine including the final specimen voided at the end of the 24 hour time period, i.e. at 0800 the next morning. **Causes for Rejection:** Improperly labeled specimen; not all of the 2-4 hour specimen submitted.

INTERPRETATION Normal Range: 32 - 641 U/L **Comments:** Requisition should include date and time collection started, date and time collection finished. **Use:** Work-up for abdominal pain, epigastric tenderness, nausea and vomiting; urine amylase is used in the differential diagnosis of pancreatitis.

ANAEROBIC CULTURE

SYNONYMS Anaerobic Culture, Abscess; Wound Culture, Tissue Culture

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 553 if computer down **Availability:** Daily **Turnaround Time:** 7 days with no growth aerobically or anaerobically. Anaerobically with growth, 5 to 7 days, aerobically with growth, 3 days. **Special Instructions:** Specimen for anaerobic culture needs to be accompanied by an aerobic culture. Annotate the specific type and site of the specimen, age of patient, antimicrobial therapy, diagnosis, and time of collection. **Cost:** \$ 21.00

SPECIMEN Type: Fluid, pus or other material properly obtained from an abscess for optimal yield. Abscess (deep), sinus tract, deep-wound drainage, decubiti and other surface ulcers, lung tissue, transtracheal aspirate, percutaneous aspirate, transcutaneous aspirate, bronchial brushing via double-lumen catheter, upper genital tract (double lumen collector of pipelle system), laparoscopic, culdocentesis, surgical, intrauterine devices suprapubic bladder tap. **Volume:** Optimal yield on swab **Minimum Volume:** N/A **Container:** Aspirated material (A.M.) or tissue in anaerobic transport devices (\leq 2-3

hours). < 1.0 mL A.M. in syringe (\leq 10 min.), 1.0mL A.M. in syringe (< 30 min.), >2.0 mL A.M. in syringe (\leq 2-3 hours), tissue, sterile container (< 30 min.) Anaerobic swabs in anaerobic transport medium (\leq 2-3 hours). Bring as soon as possible. **Collection:** Specimens are to be collected from a prepared site using sterile technique. Contamination with normal flora from skin, rectum, vaginal tract, or other body surfaces must be avoided. Aspirated material air-expressed in syringe with capped needle, aspirated or tissue in anaerobic transport device, tissue in sterile container. Note: Anaerobic swabs are acceptable but least desirable because: 1.) small volume of specimen 2.) greater chance of contamination 3.) excessive dryness 4.) bacteria adherence to cotton fibers 5.) poor Gram stain quality. **Storage:** N/A **Patient Preparation:** Aseptic preparation of the aspiration site. The adjacent areas must be prepared to eliminate isolation of possible contaminating aerobes or anaerobes which colonize the skin surface. **Causes for Rejection:** Specimens which have been refrigerated or have an excessive delay in laboratory submission; improperly labeled specimen, improper specimen type or collection.

INTERPRETATION Normal Range: No growth of anaerobic bacteria. **Comments:** In open wounds, anaerobic organisms may play an etiological role whereas aerobes may represent superficial contamination. **Use:** Isolate and identify aerobic and anaerobic organisms from abscess sites. For aerobic organisms, isolation and identical, aerobic culture should be submitted. Improper collection can result with contamination of anaerobes and aerobes non-pathogenic to the infection or disease process. Gram stain order should accompany an anaerobic culture.

ANDROSTANEDIOL (N) *shipped to outside facility for testing*

ANDROSTENEDIONE (N) *shipped to outside facility for testing*

ANGIOTENSIN CONVERTING ENZYME (N) *shipped to outside facility for testing*

ANTIBODY IDENTIFICATION

SYNONYMS Antibody ID

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 518; SF 557; SF 556 **Availability:** Daily **Turnaround time:** ASAP-within 2 hours; Routine 4-24 hours. **Special instructions:** N/A **Cost:** \$ 21.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3mL **Container:** 7 mL pink top (EDTA) tube **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, Date and time of collection and Phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** At Patient's bedside: 1) Patient must be positively identified by hospital bracelet on wrist, 2) After patient verification and blood draw, labeled tube according to collection instructions, 3) Sign and verify form SF 518 indicating you have drawn specimen from identified patient. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen from identified patient.

INTERPRETATION Normal Range: N/A **Comments:** If a clinically significant antibody is found on a prenatal, a titration is done. If one is found on a T&S, it is automatically converted to a T&C and units are phenotyped. **Use:** To identify an antibody in patients sera that could cause 1) destruction of the patient's own red blood cells (autoantibody), 2) destruction of a donor's red blood cells (alloantibody), or 3) destruction of red blood cells of the female patient's fetus or newborn, Hemolytic Disease of the Newborn (HDN)

ANTIBODY SCREEN (IND.COOMBS)

SYNONYMS AB Screen; Indirect coombs; Coombs, Indirect

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF 556 if computer down **Availability:** Daily **Turnaround time:** STAT: 1 hour; ASAP: 2 hours; Routine 4-24 hours. **Special instructions:** N/A **Cost:** \$ 12.60

SPECIMEN Type: Blood **Volume:** 7mL **Minimum Volume:** 3 m. **Container:** 7 mL pink top (EDTA tube) **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, Date and time of collection and Phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** N/A **Causes for Rejection:** Mislabelled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: Negative: Positive results would require an antibody identification work-up. **Comments:** Antibody identification is ordered automatically. If clinically significant antibody found on prenatal a titration is done. **Use:** To determine if patient has a detectable antibody that could cause 1) destruction of patients own red cells (autoantibody), 2) destruction of donors red blood cells, 3) destruction of red blood cells of the female patient's fetus or newborn, Hemolytic Disease of the Newborn (HDN).

ANTIBODY TO GANGLIOSIDE GM1(N) *shipped to outside facility for testing*

ANTI-CARDIOLIPINS ANTIBODIES (A) *shipped to outside facility for testing*

ANTI-CENTROMERE ANTIBODY (N) *shipped to outside facility for testing*

ANTI-DNA (BAMC) *shipped to outside facility for testing*

ANTI-DNASE-B ANTIBODY (Q) *shipped to outside facility for testing*

ANTI-GLIADIN ANTIBODY PANEL (N) *shipped to outside facility for testing*

ANTI-GLOMERULAR BASE/MEMB (N) *shipped to outside facility for testing*

ANTI-HISTONE ANTIBODIES (N) *shipped to outside facility for testing*

ANTI-NEUTROPHIL CYTOPLASM ANTIBODY (N) *shipped to outside facility for testing*

ANTI-PLATELET ANTIBODIES (DIRECT) (N) *shipped to outside facility for testing*

ANTI-PLATELET ANTIBODIES (INDIRECT) (N) *shipped to outside facility for testing*

ANTI-SPERM ANTIBODIES, IB SERUM (N) *shipped to outside facility for testing*

ANTI-THROMBIN III ANTIGENIC (N) *shipped to outside facility for testing*

ANTI-THROMBIN III FUNCT. (N/WHMC) *shipped to outside facility for testing*

ANTI-THYROGLOBULIN ANTIBODY (N) *shipped to outside facility for testing*

ANTI-THYROID PEROXIDASE ANTIBODY (N) *shipped to outside facility for testing*

ANTI-TSH BLOCKING ANTIBODY (N) *shipped to outside facility for testing*

ANTI-YO (N) *shipped to outside facility for testing*

ARGININE VASOPRESSIN (ADH) (N) shipped to outside facility for testing

ASO QUALITATIVE

SYNONYMS Anti-Streptolysin O

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Monday through Friday, 0730 to 1600, except Holidays
Turnaround Time: 1 week **Special Instructions:** N/A **Cost:** \$12.60

SPECIMEN Type: Blood **Volume:** 15 mL **Minimum Volume:** 7 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and store between 2° and 8° C for up to one week. If longer, store at or below -20° C. **Patient Preparation:** N/A **Causes for Rejection:** Hemolyzed specimen; lipemic sera; improperly labeled specimen.

INTERPRETATION Normal Range: Agglutination identifies a ASO concentration greater 200 IU/mL \pm 20% in the sample. Those samples that do not show agglutination contain ASO concentrations less than 200 IU/mL. **Comments:** Elevated titers are seen in 80 to 85% of patients with acute rheumatic fever and in 95% of patients with acute glomerulonephritis. A detectable level of 200IU/mL Antistreptolysin-O antibodies is usually regarded as the normal upper limit, since less than 15-20% of healthy individuals demonstrate titers higher than 200IU/mL when their sera are assayed. Elevated ASO titers may be associated with ankylosing spondylitis, glomerulonephritis, scarlet fever and tonsillitis. Increased ASO levels are generally not found in sera of patients with Rheumatoid Arthritis except during acute episodes. **Use:** Document exposure to streptococcal infection. A marked rise in titer or a persistently elevated titer indicates that a streptococcal infection or post streptococcal sequelae is present. **Limitations:** Reaction times greater than 2 minutes can lead to false positive results (due to drying effect). Very lipemic sera can also cause non-specific reactions. Strength of agglutination is not indicative of the ASO concentration in the sample. In the qualitative test procedure, weak reactions may occur with markedly elevated concentrations. In cases of greatly increased ASO titer (more than 2000 IU/mL), agglutination may be inhibited because of antibody excess (prozone effect). When such high ASO concentrations are to be expected, the sample should be tested diluted. The results of this test should always be interpreted in the light of clinical and other laboratory findings. Negative results do not rule out the diagnosis of acute rheumatic fever or post-streptococcal glomerulonephritis.

ASO QUANTITATIVE

SYNONYMS Anti-Streptolysin O

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Monday through Friday, 0730 to 1630, except Holidays
Turnaround Time: 1 week **Special Instructions:** N/A **Cost:** \$15.40

SPECIMEN Type: Blood **Volume:** 15 mL **Minimum Volume:** 7 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and store between 2° - 8° C for up to one week. If longer, store at or below -20° C. **Patient Preparation:** N/A **Causes for Rejection:** Hemolyzed specimen; lipemic sera; improperly labeled specimen.

INTERPRETATION Normal Range: Agglutination identifies a ASO concentration greater than 200 IU/mL \pm 20% in the sample. Those samples that do not show agglutination contain ASO concentrations less than 200 IU/mL. The highest sample dilution which still shows distinct agglutination is reported. **Comments:** Elevated titers are seen in 80 to 85% of patients with acute rheumatic fever and in 95% of patients with acute glomerulonephritis. A detectable level of 200IU/mL Antistreptolysin-O antibodies is usually regarded as the normal upper limit, since less than 15-20% of healthy individuals demonstrate titers higher than 200IU/mL when their sera are assayed. Elevated ASO titers may be associated with ankylosing spondylitis, glomerulonephritis, scarlet fever and tonsillitis. Increased ASO levels are generally not found in sera of patients with Rheumatoid Arthritis except during acute episodes. **Use:** Document exposure to

streptococcal infection. A marked rise in titer or a persistently elevated titer indicates that a streptococcal infection or post streptococcal sequelae is present. **Limitations:** Reaction times greater than 2 minutes can lead to false positive results (due to drying effect). Very lipemic sera can also cause non-specific reactions. Strength of agglutination is not indicative of the ASO concentration in the sample. In the qualitative test procedure, weak reactions may occur with markedly elevated concentrations. In cases of greatly increased ASO titer (more than 2000 IU/mL), agglutination may be inhibited because of antibody excess (prozone effect). When such high ASO concentrations are to be expected, the sample should be tested diluted. The results of this test should always be interpreted in the light of clinical and other laboratory findings. Negative results do not rule out the diagnosis of acute rheumatic fever or post-streptococcal glomerulonephritis.

ASPERGILLUS ANTIBODIES PANEL (N) *shipped to outside facility for testing*

ASPERGILLUS SPECIES ANTIBODIES (N) *shipped to outside facility for testing*

AST

SYNONYMS Aspartate Aminotransferase; GOT; Glutamic Oxaloacetic Transaminase; SGOT

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: N/A **Cost:** \$8.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum after processing **Patient Preparation:** Preferred fasting **Causes for Rejection:** Hemolysis; prolonged serum-cell contact; gross lipemia; improperly labeled specimen.

INTERPRETATION Normal Range: Male 17 –59 U/L, Female 14 - 36 U/L **Comments:** Elevated in liver necrosis and acute myocardial infarction. **Use:** Contributes to diagnosis of liver, heart, and muscle inflammatory processes.

AUTOPSY

SYNONYMS Necropsy; Postmortem Examination

ADMINISTRATION Department: Anatomic Pathology **Request Method:** Signed and witnessed autopsy permit **Availability:** Daily. Consult with pathologist. **Turnaround Time:** Preliminary report in 24 hours. Full report in one month on uncomplicated cases. **Special Instructions:** A hospital autopsy is not performed until the pathologist has in hand a properly signed autopsy permit. A valid permit must contain the signature of the highest ranking survivor in the next of kin lineage. The Patient Administration Division is the authority on next of kin ranking. A commonly used decreasing order of responsibility:

1. Spouse
2. Adult children
3. Parents
4. Adult brothers and sisters
5. Relatives
6. Anyone who will accept responsibility for the body for purposes of burial. Witnesses are required to sign autopsy permits. It is desirable as well as courteous for the attending physician to discuss the clinical particulars with the Pathologist before dissection is begun. Clinician attendance at autopsy is always rewarding to everyone involved and improves the quality of the case.

Certain autopsies are required for medico-legal purposes, are done under legal or regulatory authority, and should not have permission requested of next of kin. General Leonard Wood Army Community Hospital physicians should request autopsies in all of the following cases through command channels,

(next-of-kin will not be asked) seeking authority from the Hospital Commander, Post Commander, or civilian authority:

1. Trauma, suspected trauma, or toxic agents (drugs).
2. Death in active duty soldiers.
3. Death in a person under age 18.
4. Death in a person who is not an admitted hospital patient.

ABORTIONS, IMMATURE AND PREMATURE INFANTS AND FETAL DEATHS:

A. LIVE BIRTH:

1. Definition of Live Birth: Live birth is the complete expulsion or extraction from its mother of a product of conception (irrespective of duration of pregnancy) which, after such separation breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.
2. Any live birth is to be registered by completing the State of Missouri Division of Health form entitled "Certificate of Live Birth."
3. If an infant who fills any of the above criteria in the definition of live birth dies immediately or shortly after delivery, a Certificate of Live Birth and a Certificate of Death must be filled out.

B. FETAL DEATH AND ABORTION:

1. Definition of Fetal Death: Fetal death is death prior to complete expulsion or extraction from its mother of a product of conception. The death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Fetal death must be registered if the 20th week of gestation has been reached. A Fetal Death Certificate must be filled out.
2. If the gestational age cannot be determined by the history or by the physical measurements, then a pathologist may be consulted.
3. When the criteria for registration of fetal death are fulfilled, the procedure for handling the body is the same as for that of an adult death.
4. Definition of Abortion: Abortion is presumed to have occurred if any two of the following criteria are present:
 - a. The length of gestation is less than 20 weeks.
 - b. The fetal size is less than 350 grams.
 - c. The fetal crown-heel length is under 28 centimeters.
5. Abortions are sent to the Laboratory as surgical specimens.

C. IMMATURITY AND PREMATUREITY:

1. Immaturity is present if the infant fulfills any two of the following criteria:
 - a. Length of gestation is from 20 to 28 weeks.
 - b. Weight of the infant is between 350 and 999 grams.
 - c. Length of the infant is from 28 to 35 centimeters.
2. Prematurity is present if the infant fulfills any two of the following criteria:
 - a. Length of gestation is from 28 to 37 weeks.
 - b. Weight of the infant is from 1000 to 2499 grams.
 - c. Length of the infant is from 35 to 47 centimeters.

INTERPRETATION Use: Determination of cause, manner, and circumstances of death; determination of severity of disease; an effort to preserve the quality of medical practice and to support excellence in medicine; enhancement of medical knowledge; understanding of pathogenesis; to produce valid statistics not otherwise available; may resolve insurance questions. **Limitations:** Medico-legal cases: In possible medico-legal cases, the pathologist should be contacted before any suggestion regarding autopsy permission is made to the family of the deceased.

BACTERIAL MENINGITIS PANEL (N) *shipped to outside facility for testing*

BENCE JONES (B) *shipped to outside facility for testing*

BENZODIAZEPINES QUANTITATIVE (N) *shipped to outside facility for testing*

BHCG, QUALITATIVE SERUM

SYNONYMS Human Chorionic Gonadotropin (Qualitative); Qual-HCG; Qual-BHCG; Serum HCG

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 - 24 hours **Special Instructions:** N/A **Cost:** \$ 11.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A
Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: Negative; Pregnancy: Positive **Comments:** In the event of a suspected pregnancy, spontaneous abortion, or other potentially life-threatening circumstances, a Quantitative HCG can be ordered on a STAT basis. INDICATE REASON FOR STAT ORDER ON REQUEST SLIP. **Use:** Determination of pregnancy to a limited extent

BHCG, QUANTITATIVE

SYNONYMS Human Chorionic Gonadotropin (Quantitative); Quant-HCG; Quant-BHCG

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** STAT: 1 hour (Only in cases to rule out ectopic pregnancy); ASAP: 2 hour ; Routine: 4 - 24 hours **Special Instructions:** N/A **Cost:** \$ 32.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A
Causes for Rejection: Untimely delivery to the laboratory, greater than 2 hours after collection; improperly labeled specimen.

INTERPRETATION

Normal Range:

Gray Zone (resubmit in 48 hrs)	5-25 mIU/mL
3rd to 4th week	9-130 mIU/mL
4th to 5th week	75-2600 mIU/mL
5th to 6th week	850-20800 mIU/mL
6th to 7th week	4000-100200 mIU/mL
7th to 12th week	11500-289000 mIU/mL
12 th to 16 th week	18300- 137000 mIU/mL
16 th to 29 th week	1400-53000 mIU/mL
29 th to 41 st week	940- 60000 mIU/mL

Comments: In the event of a suspected pregnancy, spontaneous abortion, or other potentially life-threatening circumstances, a Quantitative HCG can be ordered on a STAT basis. INDICATE REASON FOR STAT ORDER ON REQUEST SLIP. **Use:** Determination of pregnancy to a limited extent; monitor progression of the pregnancy; used for suspected ectopic pregnancy; to monitor uteral expulsion following spontaneous abortions/D & C.

BHCG TUMOR MARKER

SYNONYMS Human Chorionic Gonadotropin (Tumor Marker)

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 32.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Untimely delivery to the laboratory, greater than 2 hours after collection; improperly labeled specimen.

INTERPRETATION Normal Range: < 2 mIU/mL **Comments:** N/A **Use:** Determination of cancerous conditions such as testicular, lung, cervical cancers.

BILI FRACTIONATION PANEL

SYNONYMS Direct Bilirubin, Indirect Bilirubin, Delta Bilirubin, Conjugated Bilirubin, Unconjugated Bilirubin

TEST INCLUDES Conjugated Bilirubin; Unconjugated Bilirubin; Delta Bilirubin

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Keep specimen protected from light. Bring to laboratory within 30 minutes after specimen is collected. **Cost:** \$ 8.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 1mL or Natelson Tube **Container:** Red or green top tube **Collection:** Routine venipuncture, fingerstick or heelstick, depending on age. **Storage:** Protect from light. Bring to laboratory within 30 minutes after collection. **Patient Preparation:** When collecting fingerstick or heelstick, collect specimen in such a manner to obtain an even, constant flow of blood. Forceful excessive squeezing causes hemolysis which can cause erroneous values. **Causes for Rejection:** Hemolysis; improperly labeled specimen; untimely delivery to laboratory, greater than 30 minutes after collection.

INTERPRETATION Normal Range: Conjugate Bilirubin: Adults < 0.3 mg/dL, Neonates <0.6 mg/dL; Unconjugated Bilirubin: Adults <1.1 mg/dL, Neonates 0.6 – 10.5 mg/dL. Delta Bilirubin: 0 – 0.2 mg/d L. Normal range for prenatal direct bilirubin is dependent on several clinical factors. It is generally greater than adult normal values. **Comments:** N/A **Use:** Evaluation of liver and biliary disease. Increased direct bilirubin occurs with biliary disease, including both intrahepatic and extrahepatic lesion. Hepatocellular causes of elevation include hepatitis, cirrhosis and advanced neoplastic states. In newborns, increased direct bilirubin may be caused by Hemolytic Disease of the Newborn (HDN).

BIOPSY (TISSUE) CULTURE

SYNONYMS Bone Marrow Culture; Biopsy Culture; Tissue Culture, see Anaerobic Culture. Fluids are under body fluid culture.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** Cultures with no bacterial growth can be reported in 2 to 3 days **Special Instructions:** Report on laboratory slip or CHCS the specific site on a source of specimen, current antibiotic therapy, and clinical diagnosis. A specimen for anaerobic culture should be accompanied by an aerobic culture. Special organism suspicions need to be indicated for proper processing and adjusting of turnaround times. Some organisms can take up to 7 days for growth. **Cost:** \$13.00

SPECIMEN Type: See synonyms **Volume:** 0.5 mL Bone Marrow, 1-2 grams tissue **Minimum Volume:** An adequate amount for culturing **Container:** For tissue, use sterile urine cup with no preservatives. Place enough sterile saline in cup to cover tissue. Bone marrow in sterile heparin tube.

Collection: Transport to the laboratory within 30 minutes after collection. **Storage:** Do not refrigerate. Immediate laboratory processing is necessary following collection. **Patient Preparation:** Use sterile technique, avoiding contamination with normal flora from skin, rectum, vagina, or other body surfaces. **Causes for Rejection:** Specimen not received in appropriate sterile or transport container. Specimen received in fixative. Specimen from sites (if anaerobic culture ordered) which have normal anaerobic flora, for example: Throat, rectal, bronchial washings, cervical or vaginal; improperly collected and labeled specimen.

INTERPRETATION Normal Range: No growth **Comments:** The use of this test is for isolation and identification of aerobic. For isolation of anaerobic organism submit anaerobic specimens and request. Specimen obtained by bronchoscopy are not ideal as the instrument itself becomes contaminated with normal or pharyngeal flora during insertion. **Use:** Isolate and identify organisms causing infections in tissues. No quantitation processing is performed.

BLASTOMYCES ANTIBODY (N) *shipped to outside facility for testing*

BLEEDING TIME

SYNONYMS N/A

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Monday through Friday; 0900 to 1100 and 1300 to 1500, excluding Holidays **Turnaround Time:** 1 hour **Special Instructions:** This test must be scheduled with the Hematology department. **Cost:** \$ 9.80

SPECIMEN Type: Blood, an in vivo test, done directly on patient **Volume:** N/A **Minimum Volume:** N/A **Container:** Filter paper **Collection:** Performed at laboratory or at bedside by a laboratory technologist. **Storage:** N/A **Patient Preparation:** Patient should be advised that this test may cause scarring. Any medication that the patient is taking should be listed on request since some medications affect result. **Causes for Rejection:** If patient needs restraint, has excessively cold or edematous arms, is unable to have a blood pressure cuff placed on either arm, or has a history of keloid formation.

INTERPRETATION Normal Range: 2 - 8 minutes **Comments:** Test should be performed no sooner than 10 days after the last dose of medication containing aspirin. **Use:** A screening test for platelet function and number. Useful in diagnosis of Von Willebrand's disease.

BLOOD COMPONENT POOLING

SYNONYMS Pool

TEST INCLUDES ABO/RH; Antibody Screen

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 518 **Availability:** Daily. **Turnaround time:** STAT-within 1 hour; ASAP-within 2 hours; ROUTINE- 4-24 hour. **Special instructions:** Submit 1 SF 518 for each unit requested. On SF 518 annotate: 1) Date requested, 2) Diagnosis, 3) Requesting physician's name, 4) Component requested, 5) Signature of verifier, 6) Date and time verified, 7) Anticipated time of need, 8) Patient's transfusion history. **COST:** \$ 30.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and Phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** At Patient's bedside: 1) Patient must be positively identified by hospital bracelet on wrist, 2) After patient verification and blood draw, label tube according to collection instructions, 3) Sign and verify form SF 518 indicating

you have drawn specimen from identified patient. **Causes for Rejection:** Mislabeled specimen or SF 518's grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A **Comments:** N/A . **Use:** To pool products, such as platelets, before issuing to a patient.

BLOOD CULTURE

SYNONYMS Aerobic Blood Culture; Anaerobic Blood Culture (both represent one set)

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** Read daily for 5 days **Special Instructions:** Requisition for a set is required. It should explain any antibiotic therapy, date, time, location, and number of blood culture sets. A pediatric blood culture is a single pediatric bottle. **Cost:** \$ 22.40

SPECIMEN Type: Blood **Volume:** 1-3 cc for pediatrics in one bottle and 5-10 cc for adults (to be distributed evenly in aerobic bottle and anaerobic bottle). **Minimum Volume:** 1 cc for pediatrics and 3 cc for adults (per aerobic and anaerobic bottle). Body weight; volume of blood for pediatric bottles (<1.5kg;<3.5lb) 1 mL, (1.5-3.9 kg;3.5lb-8.5lb) 1 mL (4.0-13.9 kg; 8.6 -30.5 lbs) 3mL. Greater than 30.5 lbs use adult bottles and volumes. **Container:** Blood Culture bottles (BACTEC Blood Culture Bottles) with trypticase-soy broth. Bottles are supplied by Material Management. A Blood Culture set contains two bottles, the orange/gold-top anaerobic bottle and blue/gray-top aerobic bottle. They are color coded to indicate the environment of the media. Each set (aerobic and anaerobic) requires a CHCS order or a requisition slip. **Collection:** Aseptic collection is warranted. See patient preparation below. Withdraw blood. (A.) Generally 3 blood culture sets collected one hour apart per disease episode are adequate to demonstrate bacteria. 1.) When fever spikes can be predicted, schedule collection of blood for culture about 30 minutes before spike. (Bacteremia proceeds fever 30-60 minutes) and collect two additional blood cultures at one hour intervals. 2.) Collection: It's not necessary to change needles before inoculating the blood culture bottles, if proper preparation is done. For severe life-threatening septicemias and prior to treatment, two venipuncture collections can be taken from separate venipuncture site collected closer than one hour but longer than 20 minutes. Less than 20 minutes, then two sets and double the volume of blood needed needs to be collected. No less than two and no more than 4 sets of blood cultures in any 24 hour period. (If bacteremia is present this detects 90-98% of the causative organism). (B.) Remove the center plastic cap from the top of the blood culture bottles. Swab each bottle with 70% alcohol to clean the septum. Inject the necessary amount of blood to aerobic and anaerobic bottles. **Storage:** Deliver to the laboratory within 1 hour after collection. **Patient Preparation:** First, cleanse the skin with 70% Isopropyl alcohol in widening circles, beginning with the site of venipuncture. Apply 2% Iodine in a spiral motion to the venipuncture site. Do not allow solution to run or drip. Iodophors may be used in lieu of iodine or a second alcohol scrub may be substituted if skin hypersensitivity exists. An instant antiseptic condition never occurs and the iodine or Iodophor should remain intact on the skin for at least 1 minute. The intended venipuncture site must not be touched unless the finger used for palpitation is similarly disinfected. After venipuncture, any residual iodine should be removed with alcohol. **Causes for Rejection:** Improperly labeled bottles are not acceptable.

INTERPRETATION Normal Range: No growth in 5 days **Comments:** This test is used for the isolation of both aerobic and anaerobic microorganisms and susceptibility testing on all significant isolates. **Use:** Isolate and identify potentially pathogenic organisms causing bacteremia, septicemia, etc. Fungal organisms can be isolated, but not optimally. Acid fast bacteria cannot be isolated. For fungus, AFB, L-forms, Brucella and Leptospira, other methods of isolation should be implemented.

BLOOD GAS PROFILE

SYNONYMS ABG; Arterial Blood Gases; Gases; Arterial

ADMINISTRATION Department: Hematology **Request Method:** CHCS order, MEDDAC Form 480, or Miscellaneous SF 557. **Availability:** Daily **Turnaround Time:** Immediately **Special Instructions:** Bring to laboratory as soon as specimen is collected. Specimen (syringe or tube) must be labeled. Labeling bag of ice that contains specimen is not adequate identification of the specimen. **Cost** \$ 29.70

SPECIMEN Type: Arterial blood, arterial cord blood, or venous cord blood. **Volume:** 1 mL **Minimum Volume:** 1 mL **Container:** Heparinized syringe **Collection:** Collection performed by respiratory therapy or other qualified personnel. Laboratory personnel do not collect blood gas samples. **Storage:** On ice immediately after collection **Patient Preparation:** Patient should be supine and relaxed. **Causes for Rejection:** Specimen not on ice; collected in improper tube; quantity not sufficient; specimen clotted; specimen improperly labeled. Needle still attached to the syringe.

INTERPRETATION Normal Range: pH: 7.35 - 7.45; pO₂: 83 to 108 mmHg; pCO₂: 35 to 45 mmHg; % O₂ Saturation 95 to 99% **Comments:** Blood gas results rarely take longer than 15 minutes to generate and report out. **Use:** Evaluate oxygen and carbon dioxide gas exchange, respiratory function including hypoxia and acid base status and the assessment of asthma, chronic obstructive pulmonary disease (COPD), embolism and other types of lung disease.

BODY FLUID CHEMISTRY PANEL

SYNONYMS Ascites Fluid, Pleural Fluid, Peritoneal Fluid, Pericardial Fluid

TEST INCLUDES Albumin; Total Protein; LDH; Amylase. Additional tests may be ordered such as pH, or specific gravity

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557; **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** Preferred fasting **Cost:** \$28.00

SPECIMEN Type: Body Fluid **Volume:** 10 mL **Minimum Volume:** 5 mL **Container:** Green top/ Sterile container **Collection:** Paracentesis/ draw a red top blood specimen also for comparison **Storage:** Separate and refrigerate specimen after processing **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: No established normal range **Comments:** Fluid albumin/serum albumin difference of > 1.1 gm/dL indicative of transudate. Increased LDH indicative of malignancy, inflammation, and hemorrhagic episodes. Increased amylase indicative of pancreatitis. Total protein's are Transudate: < 3.0 gm/dL and Exudate: > 3.0 gm/dL. **Use:** Differentiation of exudates from transudates or disease states.

BODY FLUID CULTURE (Not blood or CSF Cultures)

SYNONYMS Joint Fluid Culture, Pleural Fluid Culture, Body Fluid, Fluid, Peritoneal Fluid Culture, Ascites Fluid Culture, Synovial Fluid, Thoracentesis Fluid, Paracentesis Fluid, Pericardial Fluid

TEST INCLUDES Anaerobe culture order separate. If Nocardia or Actinomyces suspected please indicate.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Microbiology SF 553 if computer down **Availability:** Daily **Turnaround Time** 3 to 4 days with no growth. If Nocardia or Actinomyces indicated on order, then 7 days. **Special Instruction:** Site or type of specimen antimicrobial therapy, diagnosis, time of collection, age of patient information is needed beside the primary necessary information. **Cost:** \$13.00

SPECIMEN Type: See synonyms above **Volume:** 1-5 mL for bacteriology; other testing requires more **Minimum Volume:** 1 mL; no swabs **Container:** No blood culture bottles, although occasionally clots will form in some fluids, anticoagulants are not recommended. If specimen is highly likely to clot, heparin

should be the choice for bacteriology (other anticoagulants inhibit growth of some organism). **Collection:** Collect using proper technique. Avoid the induction of contamination of specimen. **Storage:** Send to Microbiology within 30 minutes or less if 1-5 mL **Patient Preparation:** N/A **Causes for Rejection:** Improperly collected or submitted.

INTERPRETATION Normal Ranges: No growth **Comments:** Type of fluid and special consideration needs to accompany the specimens. **Use:** To isolate and identify aerobic organism in body fluid **Limitations:** Fungal, viral and other types of organism. Need to be addressed by other tests.

BONE MARROW STUDY

SYNONYMS Bone Marrow; Bone Marrow Aspirate; Bone Marrow Biopsy; Culture, Bone Marrow; Bone Marrow Iron Stain; Iron Stain, Bone Marrow

ADMINISTRATION Department: Anatomic Pathology **Request Method:** Tissue Examination Form 515. Six labels must also be stamped with the patients hospital card. **Availability:** 0730 to 1330, Monday through Friday, excluding Holidays. Must be scheduled with Hematology supervisor or NCO. **Turnaround Time:** 48-72 hours (Non complicated cases) **Special Instructions:** Bone marrow procedures must be planned in advance with coordination and scheduling, allowing for indicated cultures, biopsy or other special studies. Any special or unusual test must be stated at the time of scheduling. Attending physician must contact pathologist as to scheduling. Appropriate laboratory studies must be drawn and be available for review (i.e., serum iron, TIBC, folate, etc) prior to obtaining consultation with pathologist. A bone marrow tray must be requested by the ward prior to time of procedure and be available on the ward at the specified time of procedure.

SPECIMEN Type: Bone Marrow Aspirate and/or biopsy, both preferred **Volume:** All of specimen **Minimum Volume:** Same **Container:** N/A **Collection:** N/A **Storage:** All specimens will be processed by technologist assisting physician with Bone Marrow procedures. **Patient Preparation:** Standard surgical preparation. **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Results interpreted by Pathologist. **Comments:** N/A **Use:** To detect Hematopoietic disorders.

BRUCELLA ANTIBODY (A) *shipped to outside facility for testing*

C.DIFFICILE CYTOTOXIN ANTIBODY (N) *shipped to outside facility for testing*

C1 ESTERASE INHIBITOR (B) *shipped to outside facility for testing*

C2 COMPLEMENT COMPONENT (N) *shipped to outside facility for testing*

C3/C4 PANEL (B) *shipped to outside facility for testing*

CA 19-9 (N) *shipped to outside facility for testing*

CA 27.29 (N) *shipped to outside facility for testing*

CA-125 (B) *shipped to outside facility for testing*

CALCITONIN (N) *shipped to outside facility for testing*

CALCIUM

SYNONYMS Ca; Total Calcium

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A morning, fasting specimen is desirable since some diurnal variations exist which may reflect postural changes. Venous stasis in sampling causes misleading results. **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 3 mL **Minimum Volume:** 1 mL **Container:** Red or green top tube **Collection:** Routine venipuncture with minimum venous stasis **Storage:** Promptly separate serum from cells. Calcium values remain stable 4 hours at room temperature and 1 week at 4 degrees C. **Patient Preparation:** N/A **Causes for Rejection:** Delay in separating specimen; improperly labeled specimen; gross hemolysis.

INTERPRETATION Normal Range: 8.4 - 10.3 mg/dL, Panic Range < 6 mg/dL or > 13 mg/dL
Comments: In the differential diagnosis of hypercalcemia, serum calcium should be measured on at least three separate occasions. **Use:** Work-up for coma, pancreatitis, other gastrointestinal problems, nephrolithiasis, polydipsia, polyuria, azotemia, and multiple endocrine adenomatosis.

CALCIUM (RANDOM URINE)

SYNONYMS Urine Ca

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 12.60

SPECIMEN Type: Urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** Sterile Cup or container **Collection:** Random **Storage:** Refrigerate after collection **Patient Preparation:** N/A
Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: Normal ranges not established **Comments:** Drugs affecting mineral metabolism include: Antacids, phosphates, glucocorticoids, carbonic anhydrase inhibitors, anticonvulsants, and diuretics, including thiazides. If the patient is on a stone prevention regime and test is for follow up, then medication should not be stopped for the test. **Use:** Reflects intake, rates of intestinal calcium absorption, bone reabsorption and renal loss; evaluation of bone disease, calcium metabolism, renal stones, idiopathic hypercalciuria and especially parathyroid disorders; follow-up of patients on calcium therapy for osteopenia

CALCIUM URINE PANEL 24 HOUR

SYNONYMS Urine Ca, 24 Hour Urine Calcium

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Instruct patient to void at 0800 on first day and discard the specimen. Then collect all urine including the final specimen voided at the end of the 24 hour collection period, i.e. 0800 the next morning. Container must be labeled with patient's name, date, and time collection started and finished. **Cost:** \$ 19.60

SPECIMEN Type: Urine, 24 hour **Volume:** All of the 24 hour specimen **Minimum Volume:** Same **Container:** Provided by laboratory **Collection:** 24 hour collection **Storage:** Refrigerate or keep on ice during and after collection **Patient Preparation:** In stone evaluation, urinary calcium results are more meaningful if the patient initially is on his/her usual diet for three days. **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Calcium free diet 5 - 40 mg/24 hour specimen, Low to average Calcium intake 50 - 150 mg/24 hour specimen, Average Calcium intake 100-300 mg/24 hour specimen
Comments: Drugs affecting mineral metabolism include: Antacids, phosphates, glucocorticoids, carbonic anhydrase inhibitors, anticonvulsants, and diuretics, including thiazides. If the patient is on a stone

prevention regime and test is for follow up, then medication should not be stopped for the test. **Use:** Reflects intake, rates of intestinal calcium absorption, bone reabsorption and renal loss; evaluation of bone disease, calcium metabolism, renal stones, idiopathic hypercalciuria and especially parathyroid disorders; follow-up of patients on calcium therapy for osteopenia

CALCIUM, IONIZED (N) *shipped to outside facility for testing*

CARBAMAZEPINE

SYNONYMS Tegretol

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** Trough Level: Just prior to oral dose; Peak Level: 3 hours after oral dose (if on chronic therapy). **Cost:** \$ 30.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Refrigerate **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Therapeutic: 4 - 10 ug/mL **Comments:** After beginning therapy with the drug, it requires over two weeks to reach steady-state levels. Co-administration of phenytoin, barbiturates, benzodiazepines, succinimides, and valproic acid may induce lower serum levels but better seizure control because of active metabolite, carbamazepine epoxide. For therapeutic drug monitoring, consistently use the same time interval between sampling and dose administration when comparing results from serial samples. **Use:** Monitor therapeutic drug level in treatment of trigeminal neuralgia, pain syndromes, and temporal lobe epilepsy.

CARBON DIOXIDE

SYNONYMS CO₂

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood (Venous) **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: 22 - 30 mEq/L, Panic Range < 11 mmol/L or > 40 mmol/L **Comments:** N/A **Use:** Part of the electrolyte panel (NA, K, Cl, CO₂). Monitoring of electrolyte status; screen water balance; diagnosis of respiratory and metabolic acid base balance; evaluation of hydration status, diarrhea and dehydration.

CARDIAC PROFILE

SYNONYMS Cardiac Panel

TEST INCLUDES ALT; LDH; CK (Cardiac); CKMB Mass,

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Avoid exercise before venipuncture. Increases may be anticipated in the immediate post operative period following surgical procedures involving incision through muscle. **Cost:** \$ 46.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube only
Collection: Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Hemolysis or Improperly labeled specimen.

INTERPRETATION Normal Range: See Individual Tests **Comments:** Indicative of Myocardial Infarction: Total CK > 65 U/L, CKMB Mass \geq 5 ng/mL, and CKMB Index > 4% **Use:** Test for acute myocardial infarct.

CBC/MANUAL DIFFERENTIAL

SYNONYMS Man, Diff; Differential Smear, Peripheral Blood; Differential Leukocyte Count; White Blood Cell Morphology; Peripheral Smear

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 Hours; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost** \$ 11.20

SPECIMEN Type: Blood **Volume:** 4.5 mL Properly filled purple top tube (EDTA) **Minimum Volume:** 0.5 mL in properly collected purple top (EDTA) microtainer **Container:** Purple top (EDTA) tube; purple top microtainer **Collection:** Routine venipuncture **Storage:** Mix specimen until processed **Patient Preparation:** N/A **Causes for Rejection:** QNS specimen; clotted specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Varies (see report) Ranges are dependent on age and clinical information. **Comments:** An automated differential is routinely reported. Manual differentials are performed when specific laboratory criteria are met, or when requested by Pathologist. **Use:** Determination of qualitative and quantitative variations in white cell numbers and morphology; morphology of red cells; platelet evaluation; may be of use in evaluation of anemias, leukemias, infections, inflammatory states and inherited disorders.

CAROTENE (B) *shipped to outside facility for testing*

CAT SCRATCH DISEASE PANEL (N) *shipped to outside facility for testing*

CATECHOLAMINES URINE PANEL (N) *shipped to outside facility for testing*

CBC, PROFILE

SYNONYMS Complete Blood Count

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour (Hgb, Hct, and Platelet Count ONLY); ASAP: 2 Hours; Routine: 4 to 24 hours **Special Instructions:** Gently mix specimen to prevent clotting. **Cost:** \$ 18.20

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 0.5 mL microtainer **Container:** Purple top tube (EDTA) properly filled. **Collection:** Routine venipuncture and fingerstick. **Storage:** Transport to laboratory ASAP. **Patient Preparation:** N/A **Causes for Rejection:** Clotted specimen; improperly labeled; improperly filled specimen; grossly hemolyzed specimen.

INTERPRETATION Normal Range:

Parameters	Male	Female
WBC	4.5 - 11.0	4.5 - 11.0
RBC	4.5 - 5.9	4.0 - 5.2
HGB	13.5 - 17.5	12 - 16
HCT	41 - 53	36 - 46

MCV	80 - 100	80 - 100
MCH	26 - 34	26 - 34
MCHC	31 - 37	31 - 37
RDW	11.5 - 14.5	11.5 - 14.5
PLT	150 - 440	150 - 440
MPV	7.4 - 10.4	7.4 - 10.4

Panic Values

Parameters	Less than	More than
WBC	2,000/cumm	37,000/cumm
HGB	6.6 gm/dL	19.9gm/dL
HCT	20%	61%
NBORN HCT	33%	71%
PLATELET	50,000	

Use: Evaluation of anemia, leukemia, reaction to inflammation and infections.

C3D

SYNONYMS N/A.

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF 556.
Availability: Daily. **Turnaround Time:** ASAP within 2 hours, ROUTINE within 4-24 hours. **Special Instructions:** Test performed as part of DAT – Not available as stand alone order. **Cost:** \$ 11.20.

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** N/A. **Causes for Rejection:** Mislabeled specimen for SF 518s, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A. **Comments:** N/A. **Use:** Useful in diagnosing autoimmune hemolytic anemia, drug induced hemolysis, hemolytic disease of the newborn and transfusion reactions.

CEA (B) *shipped to outside facility for testing*

CELL COUNT /DIFFERENTIAL BODY FLUID

SYNONYMS Pleural Fluid Cell Count; Pericardial Fluid Cell Count; Peritoneal and Synovial Fluids Cell Count; Thoracentesis Fluid Cell Count; Joint Fluid Cell Count; Paracentesis Fluid Cell Count

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour (Peritoneal Fluid Cell Count ONLY); ASAP: 2 hour; Routine: 4 – 24 hours **Special Instructions:** Body fluids should be delivered to the laboratory within 30 minutes. Hand directly to laboratory personnel. **Cost:** \$11.20

SPECIMEN Type: Body Fluid, specify type **Volume:** All of the Body Fluid collected for the cell count. **Minimum Volume:** Same **Container:** Purple top tube (EDTA) or red top tube **Collection:** Specimen is collected by physician. **Storage:** Transport to the laboratory within 30 minutes. **Patient Preparation:** Aseptic technique should be used in collecting specimen to prevent infection. **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: WBC Count (Peritoneal fluid) less than 300/uL; WBC Count (Synovial fluid) less than 200/uL **Comments:** N/A **Use:** To detect infection in body fluids.

CELL COUNT, DIFFERENTIAL CEREBROSPINAL FLUID ANALYSIS

SYNONYMS CSF Cell Count; Spinal Fluid Analysis; Spinal Tap Cell Count, Lumbar Puncture

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 or Spinal Fluid SF 555 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine 4 –24 hours **Special Instructions:** Tube #3 must be used in Hematology. Specimen should be delivered to the laboratory promptly (within 1/2 hour) after aspiration. **Cost:** \$ 9.80

SPECIMEN Type: CSF **Volume:** 1 mL **Minimum Volume:** Same **Container:** Sterile collection tube **Collection:** Spinal puncture. Tubes must be labeled with patients name, sponsors social, ward where collected and labeled with number indicating sequence in which tubes were obtained. A traumatic (bloody) tap may make interpretation difficult. **Storage:** Transport to laboratory ASAP. **Patient Preparation:** Aseptic preparation for aspiration. **Causes for Rejection:** Specimen improperly labeled.

INTERPRETATION Normal Range: 0 - 9 WBCs **Comments:** CSF specimens override all other tests with regard to priority. More extensive testing: Cytology, cultures, chemistry and serologic determinations must be ordered separately. **Use:** Evaluation for bacterial or viral encephalitis, meningitis, meningoencephalitis, mycobacterial or fungal infection, leukemia/malignant lymphoma of CNS, or trauma.

CELL COUNT,DIFFERENTIAL SYNOVIAL FLUID

SYNONYMS Joint Fluid Cell Count; Synovial Fluid Cell Count

TEST INCLUDES WBC, Synovial Fluid; RBC, Synovial Fluid; Polys, Synovial Fluid; Mononuclear C/Synovial Fluid; EOS, Synovial Fluid; Appearance, Synovial Fluid

ADMINISTRATION Department: Hematology **Request Form:** CHCS order Miscellaneous or SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 Hours; Routine: 4 to 24 hours **Special Instructions:** N/A. **Cost:** \$ 9.80

SPECIMEN Type: Synovial Fluid **Volume:** 3 mL **Minimum Volume:** 1 mL **Container:** EDTA Tube **Collection:** By physician **Storage:** Send to laboratory immediately after collection, process immediately after receipt in laboratory. **Patient Preparation:** N/A **Causes for Rejection:** Mislabeled specimen.

INTERPRETATION Normal Range: No Established Normal Ranges **Comments:** N/A. **Use:** Evaluation of joint inflammatory process.

CERULOPLASMIN (B) *shipped to outside facility for testing*

CH 50 (B) *shipped to outside facility for testing*

CHEM 13

SYNONYMS Profile, Chem 13 Profile; Profile, Comprehensive Metabolic Panel

TEST INCLUDES Albumin, Tot. Bilirubin, Calcium, Chloride, Creatinine, Glucose (serum/plasma), Alk. Phosphatase, Potassium, Total Protein, Sodium, AST, Urea Nitrogen, Carbon Dioxide.

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$19.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for**

Rejection: Improperly labeled specimen; grossly hemolyzed specimen.

INTERPRETATION Normal Range: See individual tests **Comments:** Calculation provided: Albumin/Globulin Ratio, Globulin, Osmolality Calculation, Bun/Creatinine Ratio,
Use: Comprehensive Metabolic Panel

CHEMISTRY 7 PANEL

SYNONYMS Profile, Chem 7; Profile, Basic Metabolic panel; Chem 7 Panel

TEST INCLUDES Chloride, Creatinine, Glucose (serum/plasma), Potassium, Sodium, Urea Nitrogen, Carbon Dioxide.

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$18.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; grossly hemolyzed specimen.

INTERPRETATION Normal Range: See Individual Tests **Comments:** Calculations provided: Osmolality Calculation, Bun/Creatinine Ratio **Use:** Basis Metabolic Panel

CHLAMYDIA GROUP ANTIBODY (N) shipped to outside facility for testing

CHLAMYDIA TRACHOMATIS PANEL (N) shipped to outside facility for testing

CHLAMYDIA TRACHOMATIS DNA PROBE – See Gen-Probe.

CHLORIDE, SERUM

SYNONYMS Cl

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 3 mL **Minimum Volume:** 1 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: 98 - 107 mEq/L or mmol/L, Panic Range is <75 mmol/L or >126 mmol/L **Comments:** N/A **Use:** Electrolyte evaluation; acid-base balance; water balance. Chloride mostly increases and decreases with serum sodium.

CHOLESTEROL

SYNONYMS Chol

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Patient must be fasting for 12 hours prior to collection. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** 12 Hour Fasting Preferred

Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: < 200 mg/dL; Borderline 200-239 mg/dL; High >240 mg/dL

Comments: N/A **Use:** Evaluate risk of coronary arterial occlusion, atherosclerosis, myocardial infarction and complications including the demise of the patient.

CHOLINESTERASE & DIBUCAINE INHIBITOR (N) *shipped to outside facility for testing*

CHROMOGRANIN A (N) *shipped to outside facility for testing*

CHROMOSOME STUDY (N) *shipped to outside facility for testing*

C1Q COMPLEMENT COMPONENT (N) *shipped to outside facility for testing*

CITRATE, 24 HOUR URINE PANEL (N) *shipped to outside facility for testing*

CLONAZEPAM (N) *shipped to outside facility for testing*

CLONIDINE (N) *shipped to outside facility for testing*

CLOSTRIDIUM DIFFICILE TOXIN A ASSAY (N) *shipped to outside facility for testing*

CMV IGM-IGG PANEL (A) *shipped to outside facility for testing*

COLD AGGLUTININ

SYNONYMS Cold Agg Screen.

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557, SF 556.

Availability: Daily **Turnaround time:** Routine 4-24 hours **Special Instructions:** N/A. **Cost:** \$ 14.00

SPECIMEN Type: Blood **Volume:** 15 mL **Minimum Volume:** 7 mL **Container:** 15 mL red top tube

Collection: Routine venipuncture. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and Phlebotomist's initials. Place specimen in 37 degree water bath immediately after collecting. Allow to clot in water bath, separate serum after clotting. **Storage:** Keep specimen warm, transport to laboratory immediately. Patient preparation: N/A **Causes for rejection:** Misabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: Negative: If positive result is obtained, must perform cold agglutinin titration and thermal amplitude studies. **Comments:** N/A **Use:** To determine if patient has a cold agglutinin; a common normally insignificant, low-titer antibody (usually autoanti-I) with a narrow thermal range. Anti-I and less often anti-I can be aphthologic in cases of Cold Agglutinin Syndrome or Cold Hemagglutinin Disease.

COLD AGGLUTININ TITER

SYNONYMS N/A

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF 556

Availability: Daily **Turnaround time:** Routine 4-24 hours. **Cost:** \$ 16.80

SPECIMEN Type: Blood **Volume:** 15 mL **Minimum volume:** 7 mL **Container:** 15 mL red top tube

Collection: Routine venipuncture. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, Date and time of collection and Phlebotomist's initials. Place specimen in 37 degree water bath immediately after collecting. Allow to clot in waterbath, separate serum after clotting. **Storage:** Keep

specimen warm, transport to laboratory immediately. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A **Comments:** Is ordered automatically based on a positive cold agglutinin test. **Use:** To determine strength of cold agglutinin.

COLLAGEN CROSS-LINKED PANEL (Q) *shipped to outside facility for testing*

COMPLEMENT C6 (N) *shipped to outside facility for testing*

CONVALESCENT HEPATITIS B PANEL (A) *shipped to outside facility for testing*

COPPER, RANDOM URINE (N) *shipped to outside facility for testing*

COPPER, SERUM (BAMC) *shipped to outside facility for testing*

CORD BLOOD

SYNONYMS N/A

TEST INCLUDES ABO/Rh and Direct Coombs

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF 556
Availability: Daily **Turnaround time:** STAT within 1 hour; ASAP within 2 hours; ROUTINE 4-24 hours. **Special instructions:** N/A **Cost:** \$ 18.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Collect by needle aspirate from infants cord. Specimen should be adequately mixed to prevent clotting. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, Date and time of collection and Phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, separate cells from plasma. Refrigerate specimen. DO NOT FREEZE. Specimen will be kept in lab for 2 weeks. **Patient Preparation:** Care should be taken to make sure infant is identified on the tube. **Causes for Rejection:** Mislabeled specimen or SF 518's grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: Direct Coomb's negative. **Comments:** N/A. **Use:** ABO/Rh grouping and DAT tests performed on cord blood specimens to determine if the mother may need RHIG; provide laboratory data to support the diagnosis of HDN and to identify infants at risk for HDN.

CORTISOL

SYNONYMS Hydrocortisone; Serum Cortisol

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** Ordered as AM or PM collection or both AM and PM collection. Please indicate on requisition the time of collection. **Cost:** \$ 35.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture at AM (0800) and/or PM (1530) **Storage:** Separate and freeze serum
Patient Preparation: N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: AM: 6 - 28 ug/dL; PM: 3 - 16 ug/dL **Comments:** Random serum cortisol may be misleading because of circadian variation in secretion. Cortisol is the major adrenal glucocortical steroid hormone, and is normally under feedback control by pituitary ACTH and the hypothalamus. **Use:** Low cortisol is found with adrenogenital syndrome, primary adrenocortical

insufficiency (Addison's Disease) and with hypopituitarism. High cortisol occurs in adrenocortical hypersecretion due to either adrenal hyperplasia or adrenal adenoma (Cushing's syndrome) and with excess pituitary ACTH (Cushing's disease) or ectopic ACTH.

CORTISOL STIMULATION PANEL

SYNONYMS Cortiosyn Stimulation; ACTH Stimulation for Adrenal Insufficiency

TEST INCLUDES Cortisol Fasting; Cortisol 30 Minute; Cortisol 60 Minute

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** Please indicate on requisition the time of collection. Collect fasting specimen prior to dosing with synthetic ACTH. Then draw a specimen 30 minute, and 60 minutes post dosing with synthetic ACTH. **Cost:** \$ 68.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture at fasting, 30 minutes, and 60 minutes. See Special Instructions. **Storage:** Separate and freeze serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: A rise of > 7 ug/dL and a Peak of > 20 ug/dL **Comments:** Absent or blunted response occurs in adrenal insufficiency, hypopituitarism, and prolonged steroid stimulation. Cortisol is the major adrenal glucocorticoid steroid hormone, and is normally under feedback control by pituitary ACTH and the hypothalamus. **Use:** Low cortisol is found with adrenogenital syndrome, primary adrenocortical insufficiency (Addison's Disease) and with hypopituitarism. High cortisol occurs in adrenocortical hypersecretion due to either adrenal hyperplasia or adrenal adenoma (Cushing's syndrome) and with excess pituitary ACTH (Cushing's disease) or ectopic ACTH.

CORTISOL SUPPRESSION TEST

SYNONYMS Dexamethasone Suppression

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** The patient ingests the Dexamethasone tablet the evening prior to testing. Please indicate on requisition the time of collection. **Cost:** \$ 35.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and freeze serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: < 5 ug/dL **Comments:** No diurnal suppression will occur in Cushing's, conditions of high stress, failure to take dexamethasone, or if diltin has been administered. Cortisol is the major adrenal glucocorticoid steroid hormone, and is normally under feedback control by pituitary ACTH and the hypothalamus. **Use:** Low cortisol is found with adrenogenital syndrome, primary adrenocortical insufficiency (Addison's Disease) and with hypopituitarism. High cortisol occurs in adrenocortical hypersecretion due to either adrenal hyperplasia or adrenal adenoma (Cushing's syndrome) and with excess pituitary ACTH (Cushing's disease) or ectopic ACTH.

CORTISOL URINE 24 HOUR PANEL

SYNONYMS Cortisol, 24 Hour Urine; Urine Cortisol

TEST INCLUDES Urine Volume; Urine Cortisol Calculation; Urine Cortisol 24 Hour

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 - 24 hours **Special Instructions:** Requires 24 hour urine collection. Keep urine refrigerated during and after collection period. No recent radioactive scans, schedule these after specimen collection. **Cost:** \$42.00
SPECIMEN Type: Urine **Volume:** All of 24 hour collection specimen **Minimum Volume:** Same **Container:** 24 hour collection container **Collection:** 24 hours with date and time started and completed. **Storage:** Freeze **Patient Preparation:** Instruct patient to void at 0800 and discard urine. Then collect all urine including the final specimen voided 24 hours later, i.e., 0800 the next morning. Patient should avoid stress prior to and during testing. **Causes for Rejection:** Improper collection time; improperly labeled specimen; recent radioactive scans; not all of 24 hour urine specimen submitted.

INTERPRETATION Normal Range: 46 – 131 ug/24 hour **Comments:** Urinary cortisol reflects the portion of serum free cortisol filtered by the kidney, freely filtered. It correlates with cortisol secretion rate. Metyrapone inhibits conversion of II-deoxycortisol to cortisol. The decrease in cortisol levels causes increased secretion of ACTH. ACTH stimulates adrenocortical secretion of II-deoxycortisol, precursor to cortisol. (Thus, giving metyrapone tests pituitary ACTH reserve and the integrity of the adrenal cortical-pituitary feedback loop). Serum II-deoxycortisol increases in patients with pituitary adenoma (Cushing's disease) and does not rise in patients with adrenol cortical tumor, in whom pituitary corticotrophe suppression is anticipated. **Use:** Differential diagnosis of Cushing's syndrome, pituitary adenoma (Cushing's disease), adrenal cortical tumor, and ectopic ACTH syndrome.

CORTISOL, FREE, 24 HOUR URINE PANEL (N) *shipped to outside facility for testing*

C-PEPTIDE (BAMC) *shipped to outside facility for testing*

C-REACTIVE PROTEIN (QUANT)

SYNONYMS Acute Phase Reactant; CRP

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** ASAP: 2 hours, Routine: 4-24 hours **Special Instructions:** N/A **Cost:** \$5.50

SPECIMEN Type: Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Red, Green, Lt blue and Lavender top tube **Collection:** Routine venipuncture **Storage:** Separate from clot within 4 hours **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; excessive hemolysis; chylous (milky) serum.

INTERPRETATION Normal Range: < 1.0 mg/dL **Comments:** Oral contraceptives may affect results. C-reactive protein in concentrations of 0.002 – 1.35 mg/L has been regularly demonstrated in sera obtained from apparently healthy children and adults of both sexes. C-reactive protein must therefore be considered a normal constituent of serum. A weak positive correlation was found between C-reactive protein concentration and age. No significant difference in C-reactive protein concentration is demonstrable between men and non-pregnant women. The mean value of C-reactive protein in adults is 0.047 mg/L. **Use:** Used similarly to Erythrocyte Sedimentation Rate (ESR), CRP is a nonspecific acute phase reactant used as an indicator of infectious disease and inflammatory states. CRP is a more sensitive, rapidly responding indicator than ESR. The presence of C-reactive protein in a human serum or plasma has long been used as a sensitive indicator of an inflammatory or necrotic process. Levels of C-reactive protein increase in a variety of diseases: pulmonary and acute respiratory diseases, acute abdominal diseases, diseases of the kidney and urinary tracts, rheumatic fever and rheumatoid arthritis, cardiovascular diseases, diseases of the digestive system, metabolic and endocrine disturbances, diseases of the blood, some virus diseases, malignant and benign tumors and a few skin diseases. **Limitations:** Serum samples containing elevated concentrations of rheumatoid factor may give false positive results. When clinical circumstances suggest that rheumatoid factor may be present it is recommended that the serum be test for rheumatoid factor.

CREATINE KINASE

SYNONYMS CK; CPK; Creatine Phosphokinase, CK (Cardiac)

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: Avoid exercise before venipuncture. Increases may be anticipated in the immediate post operative period following surgical procedures involving incision through muscle. **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube only
Collection: Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Male: 55 - 170 U/L; Female: 30 - 135 U/L **Comments:** Active Basic Recruits have higher than normal ranges due to high physical activity. Normal values are dependent on muscle mass. **Use:** Test for acute myocardial infarct and for skeletal muscular damage.

CREATINE KINASE MB (MASS)

SYNONYMS CKMB; Creatine Phosphokinase-MB isoenzyme, CKMB Mass/CKMB Index

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: A CK (creatinine kinase) must be ordered simultaneously to correlate with the CKMB value. **Cost:** \$ 25.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube only
Collection: Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; grossly hemolyzed specimen.

INTERPRETATION Normal Range: 0- 3.38 **Comments:** N/A **Use:** Diagnosis of myocardial infarction.

CREATININE CLEARANCE PANEL

SYNONYMS 24 Hour Urine

TEST INCLUDES Urine Volume; Creatinine Clearance Calculation; Urine Creatinine 24 Hour; Creatinine (Serum); Determined Body Surface Area

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Instruct patient to void at 0800 on first day and discard the specimen. Then collect all urine including the final specimen voided at the end of the 24 hour collection period, i.e. 0800 the next morning. Container must be labeled with patient's name, date, and time collection started and finished. **Cost:** \$ 21.00

SPECIMEN Type: Urine, 24 hour and blood **Volume:** All of the 24 hour specimen and 7mL blood
Minimum Volume: All of the 24 hour specimen and 3 mL blood **Container:** Urine container provided by laboratory and red or green top tube **Collection:** 24 hour collection and routine venipuncture
Storage: Refrigerate during and after collection **Patient Preparation:** Must submit patient weight and height. Instruct patient to avoid vigorous exercise, and eating large amounts of meat. Encourage fluids for good hydration. **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Less than 40 year of age: Male (97-137 mL/min)/1.73 m², Female (98-128 mL/min)/1.73 m² Value decreases approx. (6.5 mL/min)/1.73 m² per decade. **Comments:** Certain cephalosporins, especially cefoxitin, cause misleading high results. **Use:** A specific measurement of kidney function, primarily of glomerular filtration.

CREATININE, SERUM

SYNONYMS N/A

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION **Normal Range:** Male: 0.8 - 1.5 mg/dL Female: 0.7 - 1.2 mg/dL, Panic value is > 3.5 mg/dL **Comments:** Certain cephalosporins, especially cefoxitin, cause misleading high results. **Use:** A renal function test, providing a rough approximation of glomerular filtration.

CREATININE URINE (RANDOM)

SYNONYMS N/A

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Specify on requisition slip random urine. **Cost:** \$ 11.20

SPECIMEN Type: Urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** Sterile urine cup or container **Collection:** Random voided urine **Storage:** Refrigerate during and after collection period **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION **Normal Range:** Normal Values not established **Comments:** Certain cephalosporins, especially cefoxitin, cause misleading high results. **Use:** Renal function test

CREATININE URINE 24 HOUR PANEL

SYNONYMS 24 Hour Urine Creatinine Panel

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Specify on requisition slip 24 hour urine. **Cost:** \$18.20

SPECIMEN Type: Urine **Volume:** All urine collected during time frame **Minimum Volume:** Same **Container:** Provided by laboratory **Collection:** All of urine in specified time frame **Storage:** Refrigerate during and after collection period **Patient Preparation:** Instruct patient to void at 0800 and discard the specimen. Then collect all urine including the final specimen voided at the end of the specified collection time, i.e. 0800 of the next day if a 24 hour collection. Instruct patient to avoid vigorous exercise, and eating large amounts of meat. Encourage fluids for good hydration. **Causes for Rejection:** Inadequate amount of specimen

INTERPRETATION **Normal Range:** Male: 0.8 - 1.8 gm/day; Female: 0.6 - 1.6 gm/day **Comments:** Certain cephalosporins, especially cefoxitin, cause misleading high results. **Use:** A renal function test, providing a rough approximation of glomerular filtration.

CRYOGLOBULINS, SERUM, QUALITATIVE (N) *shipped to outside facility for testing*

CRYPTOCOCCAL ANTIGEN, CSF (N) *shipped to outside facility for testing*

CRYPTOSPORIDIUM EXAM (N) *shipped to outside facility for testing*

CRYSTAL EXAM, SYNOVIAL FLUID

SYNONYMS Synovial Fluid, Crystal Exam

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 Hours or Routine: 4 to 24 hours **Special Instructions:** N/A. **Cost:** \$ 14.00

SPECIMEN Type: Synovial fluid **Volume:** 3 mL **Minimum Volume:** 0.5 mL **Container:** Red top tube **Collection:** By physician. **Storage:** Send to laboratory immediately, after collection. Refrigerate within 2 hours if unable to process immediately. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Negative for crystals. **Comments:** N/A. **Use:** Evaluation of joint inflammatory processes.

CT IMMUNO PANEL (B) *shipped to outside facility for testing*

CYCLOSPORINE SERUM (N) *shipped to outside facility for testing*

CYCLOSPORINE, WHOLE BLOOD (N) *shipped to outside facility for testing*

CYSTIC FIBROSIS, DNA PROBE (N) *shipped to outside facility for testing*

CYSTINE URINE (N) *shipped to outside facility for testing*

CSF PANEL (GLUCOSE & PROTEIN)

SYNONYMS Cerebrospinal Fluid Glucose and Protein; Protein and Glucose, Cerebrospinal Fluid; CSF Glucose and CSF Protein

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** Stat: 1 hour; ASAP: 2 hours; Routine: 4 –24 hours **Special Instructions:** Tubes should be numbered according to the sequence in which tubes were obtained. Chemistry should receive #2 tube collected. Bring tube to the laboratory within 30 minutes after collection and give directly to laboratory personnel. Please submit a requisition slip for each department that the spinal fluid will be sent. **Cost:** \$ 14.00

SPECIMEN Type: Cerebrospinal fluid **Volume:** 1 mL **Minimum Volume:** Same **Container:** Clean sterile tube found in the CSF kit **Collection:** Lumbar puncture by physician, using aseptic technique **Storage:** Must be performed immediately **Patient Preparation:** Follow aseptic precautions when collecting specimen **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Protein 12 - 60 mg/dL Glucose 40 - 70 mg/dl. Panic Glucose level is < 37 mg/dl or > 438 mg/dl. Should be interpreted with serum glucose. The CSF glucose is approximately 2/3's the serum value. **Comments:** Hemolyzed, xanthochromic or bloody specimens may falsely elevate CSF protein values. **Use:** Increased with bacterial meningitis, CVA and subarachnoid hemorrhage. Evaluation of meningitis, neoplastic involvement of meninges and other neurological disorders.

CYTOLOGY, GYN

SYNONYMS Pap Test; Pap Smear, Cervical Smear; Cervico-Vaginal Cytology; Genital Cytology; Gyn Cytology

ADMINISTRATION Department: Anatomic Pathology (Cytology) **Request Method:** CHCS order or Gyn Cytology SF 541 (inpatients) **Availability:** Monday through Friday, 0730 to 1630 **Turnaround Time:** 10 working days **Special Instructions:** Minimum history required - age and last menstrual cycle. **Cost:** \$ 9.80 (No Pathologist Review) – \$ 46.20 (With Pathologist Review)

SPECIMEN Type: Cell scrapings from cervical squamo-columnar junction and/or lateral vaginal wall scraping on microscopic slides fixed immediately with spray fixative for conventional Pap Smear, for Cytyc ThinPrep Pap Test the brush and spatula are swished in a circular motion with at least 10 (ten) rotations in the Cytyc PreservCyt solution. The brush and spatula are discarded at this time. **Volume:** Ample scraping **Minimum Volume:** Specimen needs to cover at least 10% of the slide **Container:** Frosted slides labeled with patient's last name, family member prefix, and last 4 of SSN, using a lead pencil. Cytyc ThinPrep Pap Test vials must have the patients **Name, SSN with family preference, Health Care Provider, Clinic submitting and date - Collection:** Obtain specimen from complete squamo-columnar junction first by using cervical spatula or brush and rotating it 360 degrees around the ectocervix and endocervix. Spread complete sample over length of glass slide or swish (10) times in a circular motion in the Cytyc ThinPrep solution. Spread endocervical sample by rolling brush the length of the slide or swishing the brush (10) times in a circular motion in the Cytyc ThinPrep solution. Both cell samples should be spread evenly over the length of the slide. Spray slide containing both cellular samples with spray fixative (such as Spray-cyte, Pro-fix, or Cyto-fix). Send specimen to laboratory in a plastic slide box or cardboard folder or in the Cytyc ThinPrep solution. For Adenosis evaluation, the cervix and vagina should be free of mucus before smears are made or treat the specimen similar to the routine Pap smear for Cytyc ThinPrep. Make separately labeled smears from anterior, posterior, right, and left lateral walls to permit localization of lesions. **Storage:** Deliver to laboratory immediately **Patient Preparation:** Patient should not douche for 24 hours prior to examination. **Causes for Rejection:** Inadequate history; insufficient patient identification on specimen; broken or destroyed specimen slide; improper fixation or volume.

INTERPRETATION Normal Range: Adequate specimen, within normal limits for patient history. **Comments:** A cervical smear for detection of cervical cancer must contain endocervical cells to be considered adequate for interpretation. A specimen interpreted as unsatisfactory will have a stated reason for the inadequacy. **Use:** To detect the presence of cervical cancer or a precancerous condition (cervical intraepithelial lesion); to aid in diagnosis of cervical inflammatory conditions such as: Herpes virus, Candida, Trichomonas, Human Papilloma Virus (HPV).

CYTOLOGY, NON-GYN

SYNONYMS Body Fluid Cytology; Any Body Cavity Fluid (Ascitic/ Culdocentesis/ Paracentesis/Pericardial/Peritoneal/Pleural/Synovial/Thoracentesis), Tzank Smear

ADMINISTRATION Department: Anatomic Pathology (Cytology) **Request Method:** CHCS or Gyn cytology SF 541 with "Other" checked or Tissue Examination SF 515 (inpatients only for paper forms). Specify specimen source and clinical and physical history. Prior neoplasm and positive x-ray findings, etc. should be noted in history. Include tobacco use history for respiratory tract origin. **Availability:** Monday through Friday, 0730 to 1630 **Turnaround Time:** 3 working days **Special Instructions: (1) Cellular smears (bronchial wash, nipple discharge, tumor aspiration, etc.)** require immediate fixation in 95% alcohol or PAP fixative (Spray-Cyte, etc.) to eliminate drying artifacts. Drying artifact occurs in seconds and can render the specimen unsuitable for analysis. Air drying is not acceptable for samples to be stained by the Papanicolaou (PAP) method. **(2) Expecterated specimens (sputum)** can be fixed in an equal amount of Saccomanno fluid. **(3) All other cytologic specimens (body effusions, CSF, esophageal, etc.)** should be brought to the laboratory fresh immediately after being collected. If specimen cannot be obtained during duty hours, then refrigerate and deliver as soon as possible. If submitted during non-normal duty hours, specimen should be given to laboratory personnel for proper fixation of equal amounts cytology fixative to fluid. This should be the exception, rather than the rule. If the anticipated delay before delivery to Cytology is greater than 8 hours, add equal volume of Saccomanno fluid to the specimen and refrigerate. **(4)** Any specimen amenable to Cytologic examination will be accepted by our Cytology

section. Unusual specimen sources should be coordinated with the Cytotechnologist at 6-9857.

Cost: \$85.40 (Washings and Brushings) – \$133.00 (Extended Studies, Special Stains, etc.)

SPECIMEN Type: Aspiration biopsies, Breast (nipple discharge), Bronchial Brush Specimens, Bronchial Wash, Cerebrospinal Fluid, Sputums and Urines. **Container:** N/A **Collection:** (1) **Aspiration Biopsies:** Direct smears of material obtained may be fixed in cyto spray fixative, while fluids or tissue fragments may be fixed in Saccomanno. (2) **Breast (nipple discharge):** Smear of nipple discharge should be fixed immediately with “PAP fixative” such as Spray-Cyte. (3) **Bronchial Brush Specimens:** Smear brush on slide and fix immediately with “PAP fixatives.” Submit brush in Saccomanno fluid. (4) **Bronchial Wash:** Position the patient so that the bronchus in question is dependent. Fill the bronchus with normal saline aspirate and reinsert the saline several times. Aspirate all the fluid from the bronchus and send immediately **without fixative** to the Cytology section of the laboratory. If obtained during non-duty hours, place in equal volume of Saccomanno fluid. (5) **Cerebrospinal Fluid:** Should be collected during normal duty hours. When not possible, collect CSF in a separate container. Collect as much fluid as judged clinically prudent (the more the better). Deliver immediately to the Cytology section without fixative. If during non-duty hours, fix with equal volume of Saccomanno fluid, refrigerate, and sent to lab as soon as possible. **NOTE:** The portions of CSF obtained for cell count, chemistry, and microbiology can be sent to the clinical laboratory no matter what time obtained. They must be unfixed when received. (6) **Effusions and Fluids:** All fluids yield best cytologic evaluation if the specimen is immediately processed without fixation. If delays of up to 8 hours are anticipated, the specimen must be refrigerated. If delays of more than 8 hours are anticipated, add equal volume of Saccomanno fluid and refrigerate. (It is very important that even though fixative is added, that specimen must still be refrigerated). (7) **Esophagoscopy Washings:** During esophagoscopy, rinse lesion with 10-20 mL of normal saline. Aspirate saline into container, fix with an equal amount of Saccomanno fluid. (8) **Sputum:** Upon awakening, patient should cough deeply and expectorate into the sputum cup. The sputum is collected fresh and should be kept refrigerated until brought into the lab. Any additional specimen from deep coughing may be included in the sample. Repeat for 3 consecutive days using 3 separate containers (sterile urine cup). (9) **Urine:** Random void is preferred. Specimens received after 1600 should be fixed in an equal volume of Saccomanno fluid. First morning void contains cells that have been in urine overnight and are very degenerated. The accompanying form (SF 515 or CHCS order) should indicate whether urine is a voided or a catheterized specimen, as interpretation is dependent upon this knowledge. (10) **Smears:** Ocular or skin lesion smears collected in the clinic by swabbing the ocular lesion or scraping skin lesion (after first removing any keratotic layer by an initial scraping) then immediately smeared on 2 glass slides with material from lesion. Immediately spray fixative on one slide; let the other air dry. **Collection:** Usually a clinical procedure. Submit fresh specimen in an appropriate container or fixed as noted. **Storage:** Bring fresh specimens immediately to laboratory. **Patient Preparation:** Clinical preparation for defined procedure. **Causes for Rejection:** Prolonged period at room temperature before processing of unfixed specimens; gross contamination; spillage of specimen; improperly labeled specimen and/or requisition.

INTERPRETATION Normal Range: Each body location has cells common to the site. If neoplastic cells are present, the type and body site will be commented on. **Comments:** A second puncture and fluid withdrawal may be required at 24 hour intervals or less until sufficient fluid has accumulated for certain cases. Cellular degeneration occurs in fluids and a second sample (tap) may provide better diagnostic cellular details. **Use:** To establish the presence or absence of neoplastic cells; to establish the presence of primary or metastatic neoplasms; aid in the diagnosis of rheumatoid pleuritis, Systemic Lupus Erythematosus, myeloproliferative and lymphoproliferative disorders, fungal and parasitic infestation of serous cavities and fistulas involving serous cavities; examination of synovial fluid from a joint effusion may aid in arthritis diagnosis of metabolic rheumatoid arthritis or traumatic arthritis; may be helpful in diagnosis of some systemic diseases and fungal or parasitic infections.

CYTOMEGALOVIRUS CULTURE (Q) *shipped to outside facility for testing*

DELTA AMINOLEVULINIC ACID (N) *shipped to outside facility for testing*

DHEAS (B) *shipped to outside facility for testing*

DIGOXIN

SYNONYMS Dig; Lanoxin

ADMINISTRATION Department: Chemistry **Request Form:** CHCS order or Miscellaneous SF 556
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: Draw at least 6 to 8 hours after last dosage. **Cost:** \$ 20.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red green top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A
Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: Therapeutic: 0.8 - 2.0 ng/mL Toxic: Adult: > 2.5 ng/mL; Child: > 3.0 ng/mL; Arrhythmias: 1.5-2.0 ng/mL **Comments:** Peak concentration is usually reached a) by IV administration immediately after drug is administered and b) by Oral administration 60-90 minutes after dosage. **Use:** Diagnosis and prevention of digoxin toxicity; prevention of underdosage; monitor therapeutic drug level; prevention and therapy of cardiac arrhythmias; patients with implanted pacemaker.

DIRECT ANTIGLOBULIN TEST

SYNONYMS DAT; Direct Coombs; Direct Coomb's; Coombs (direct)

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557, SF 556
Availability: Daily. **Turnaround time:** STAT: 1 hour; ASAP: 2 hours; Routine 4-24 hours. **Special Instructions:** N/A. **Cost:** \$ 11.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 ml pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and Phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A. **Comments:** If DAT comes up positive an IGG and C3d test are automatically ordered and run. **Use:** Useful in diagnosing autoimmune hemolytic anemia, drug induced hemolysis, hemolytic disease of the newborn and transfusion reactions.

DNA HISTOGRAM, BLOOD / BONE MARROW (N) *shipped to outside facility for testing*

DOXEPIN PANEL (N) *shipped to outside facility for testing*

DX PANEL-CLL, HCL, SLL (N) *shipped to outside facility for testing*

D-XYLOSE, 5 HOUR URINE (N) *shipped to outside facility for testing*

EAR CULTURE

SYNONYMS Otitis media, Otitis externa

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Microbiology SF 553 if computer down **Availability:** Daily **Turnaround Time:** Negative cultures are reported within 72 hours. **Special Instructions:** If a specific microbe is suspected, such as Pseudomonas, Haemophilus, or Candida, please notify the laboratory. Also transcribe the suspected organism on the laboratory slip. **Cost:** \$ 18.20

SPECIMEN Type: Moist swab or aspirate **Volume:** Ample amount for culture **Minimum Volume:** Ample amount for culture **Container:** Sterile red top tube for aspirate or sterile aerobic culturette for swab. If anaerobe suspect process as anaerobe culture. **Normal Range:** Coagulase - Negative

staphylococcus, diptheroids, viridans streptococci. **Collection:** Transport to laboratory as soon as possible. **Storage:** Do not refrigerate. **Patient Preparation:** Cleanse the site to reduce background contamination **Causes for Rejection:** Improperly labeled or collected specimen.

INTERPRETATION Normal Range: No growth or normal flora. **Comments:** Improperly collected specimen preclude meaningful interpretation. Anaerobes do not cause otitis externa and thus aerobic culture should be submitted for the otitis externa site of the ear. **Use:** To determine the etiological agent(s) of otitis externa or otitis media.

EARLY B.BURGDORFERI ANTIBODY PANEL (N) *shipped to outside facility for testing*

EHRlichia chaffeensis Panel (N) *shipped to outside facility for testing*

ELECTROLYTES PANEL

SYNONYMS Lytes, Serum; Chem 4 Electrolytes, Electrolytes

TEST INCLUDES Sodium, Potassium, Chloride, and Carbon Dioxide

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$15.40

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture. Do not allow patient to clench-unclench his/her hand to avoid blood stasis (hemolysis) and spurious elevated potassium levels. **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improper labeling of specimen or Hemolysis.

INTERPRETATION Normal Range: Sodium: 137 - 145 mmol/L; Potassium: 3.6 - 5.0 mmol/L; Chloride: 98 - 107 mmol/L; Carbon Dioxide: 22.0 - 30.0 mmol/L **Panic Values:** Sodium: < 120 mmol/L or > 158 mmol/L; Potassium: < 2.8 mmol/L or > 6.2 mmol/L; Chloride: < 75 mmol/L or > 126 mmol/L; Carbon Dioxide: <11 mmol/L or > 40 mmol/L **Comments:** Note: Hemolyzed specimens will tested but results will be annotated for Hemolysis. **Use:** Utilized in acid-base balance; monitoring of electrolyte status; screen water balance; diagnosis of respiratory and metabolic acid-base balance; evaluation of hydration status, diarrhea, dehydration, ketoacidosis in diabetes mellitus and other disorders; alcoholism and other toxicity.

ELECTROLYTES, STOOL (Brooks) *shipped to outside facility for testing*

ENTEROVIRUS DETECT.RT-PCR (EF) *shipped to outside facility for testing*

EOSINOPHIL COUNT

SYNONYMS EOS Count

ADMINISTRATION Department: Hematology **Request Method:** CHCS or Miscellaneous SF 557
Availability: Daily. **Turnaround Time:** ASAP 2 hours; routine 4 to 24 hours. **Special Instructions:** N/A. **Cost:** \$ 5.60

SPECIMEN Type: Blood **Volume:** 3-5 mL **Minimum Volume:** 250 mL Microtainer **Container:** EDTA purple top tube or EDTA microtainer. **Collection:** Normal venipuncture or capillary puncture methods. **Storage:** Mix well by gentle inversion several times, then send to laboratory ASAP **Patient Preparation:** N/A **Causes for Rejection:** Mislabeled labeled samples, unlabeled samples, clotted samples, or hemolyzed samples.

INTERPRETATION Normal Range: Newborn < 24 hours old: 20-850/cumm; One year old: 50 -

700/cumm; Adult: 0 - 450/cumm. **Comments:** N/A. **Use:** Investigation of allergic, asthmatic disorder, and parasitic infestations.

EOSINOPHIL, NASAL SMEAR

SYNONYMS Nasal Smear for Eosinophils; Eye Smear for Eosinophils; Fecal Smear for Eosinophils

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 9.80

SPECIMEN Type: Monolayer smear on glass slide **Volume:** N/A **Minimum Volume:** N/A **Container:** Submit in a plastic slide box to isolate from contaminants. **Collection:** Culturette swab on to slide **Storage:** Room temperature **Patient Preparation:** N/A **Causes for Rejection:** Too thin or too thick smear (unreadable); no specimen (smear) on slide; improperly labeled smear.

INTERPRETATION Normal Range: 0 - 5% EOS (Nasal). **Comments:** An increase is usually associated with allergic reaction to drugs/medication and parasitic infections. **Use:** Investigation of allergic, asthmatic disorders.

EPSTEIN BAR VIRUS PANEL (A) shipped to outside facility for testing

ERYTHROCYTE SEDIMENTATION RATE

SYNONYMS ESR; Sedimentation Rate (Wintrobe); Wintrobe Sedimentation Rate; Wintrobe ESR

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous Request SF 557 **Availability:** Daily **Turnaround Time:** 2 hours **Special Instructions:** Specimen must be received within 4 hours after collection. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 4.5 mL in 5 mL Purple top tube (EDTA) **Minimum Volume:** 1.5 mL in a 2.7 mL Purple top tube **Container:** Purple top tube (EDTA) **Collection:** Routine venipuncture. Specimen must be mixed before the test is performed. **Storage:** Room temperature **Patient Preparation:** N/A **Causes for Rejection:** Quantity not sufficient; clotted specimen; hemolyzed specimen; improperly labeled specimen; untimely delivery of specimen to laboratory, greater than 4 hours after collection.

INTERPRETATION Normal Range: Male: 0 - 10 mm/hr; Female: 0 - 20 mm/hr; Children: 0 - 15 mm/hr **Comments:** N/A. **Use:** Nonspecific activity of infections, inflammatory states, autoimmune disorders and plasma cell dyscrasias.

ERYTHROPOIETIN (N) shipped to outside facility for testing

ESTRADIOL, SERUM (B) shipped to outside facility for testing

ESTROGEN/PROGESTERONE RECEPTORS (W) shipped to outside facility for testing

ETHANOL/ALCOHOL

SYNONYMS Blood Alcohol Test; ETOH; BAT; MBAT; Medical Blood Alcohol Test; Alcohol, Blood; Ethyl Alcohol, Blood; Legal Blood Alcohol

TEST INCLUDES Ethanol plasma/serum, and Ethanol % (calculate)

ADMINISTRATION Department: Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour (Medical Only); ASAP: 2 hours (Medical Only); Routine: 4 to 24 hour **Special Instructions:** Do not prepare venipuncture site with an alcohol swab.

Cost: \$ 17.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Grey top tube (red top tube will be accepted for medical alcohol's only) **Collection:** Do not prepare venipuncture site with an alcohol swab. Hexachlorophene-based, iodine based, or mercury based antiseptics not containing alcohol may be used. **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: None detected **Comments:** Concentrations of ethanol are 10% to 15% higher in serum and plasma in comparison to whole blood ethanol values. Maintain Chain of Custody for Legal blood alcohol's. See front of Lab Manual for complete instructions. **Use:** Quantitative alcohol level for medical purposes only. Used to diagnose alcohol intoxication and determine appropriate therapy.

ETHOSUXIMIDE (N) *shipped to outside facility for testing*

ETHYLENE GLYCOL (SK) *shipped to outside facility for testing*

EYE CULTURE

SYNONYMS Conjunctiva culture, keratitis (cornea), endophthalmitis (vitreous fluid), Dacryocystitis (lacrimal sac), canaliculitis.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** If no growth, in 72 hours **Special Instructions:** Inform the laboratory of the specific source of specimen, if patient is on any form of antibiotic therapy and any suspected clinical diagnosis. **Cost:** \$ 18.20

SPECIMEN Type: Eye swab, vitreous fluid, cornea scrapings, intraocular fluid **Volume:** Ample specimen on swab or syringe. **Minimum Volume:** For cornea scrapings, 3-5 scraping per cornea. If both eyes are affected, submit one culture for each eye. **Container:** Culturettes-aerobic **Collection:** If swab, transport to the laboratory within 2 hours of collection, if fluids 15 minutes. Collect the specimen by swabbing; pass moistened swab 2 times over lower inferior tarsal conjunctival fornix. **Storage:** Transport to laboratory immediately; often only few microorganisms are present. **Patient Preparation:** Cleanse skin around the eye with antiseptic. Gently remove make-up and ointment with sterile cotton and saline. For conjunctival or cornea specimen: a.) Instill 1 to 2 drops proparacaine hydrochloride. b.) using a Kimura spatula, gently scrap across the lower right tarsal conjunctiva (or cornea). **Causes for Rejection:** Unlabeled improperly submitted specimen.

INTERPRETATION Normal Range: Normal flora of eye usually consist of: Coagulase - negative staphylococcus, diphtheroids, viridans streptococcus. Rare situation normal flora could be significant. **Comments:** The procedures will not detect Chlamydia, viruses, or mycobacterium which cause conjunctivitis. Smears for Gram stain are recommended. If culture for gonorrhea is suspected, see gonorrhea culture procedure. **Use:** Isolate and identify potentially pathogenic organisms.

FACTOR VIII PANEL (N) *shipped to outside facility for testing*

FACTOR XI (N) *shipped to outside facility for testing*

FACTOR XIII (N) *shipped to outside facility for testing shipped to outside facility for testing*

FECAL FAT (QUALITATIVE) (Q) *shipped to outside facility for testing*

FECAL FAT QUANTATIVE (BAMC) *shipped to outside facility for testing*

FECAL LEUKOCYTES

SYNONYMS Fecal WBC; WBC, Fecal

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP 2 hours or Routine 4 - 24 hours. **Special Instructions:** N/A **Cost:** \$ 9.80

SPECIMEN Type: Feces collected in labeled plastic container or feces placed in thin layer on glass slide. **Collection:** Give patient sample cup or physician may collect specimen. **Storage:** Send sample to laboratory ASAP. **Patient Preparation:** N/A **Causes for Rejection:** Mislabeled or unlabeled specimen.

INTERPRETATION **Normal Range:** Negative for fecal leukocytes. **Comments:** N/A. **Use:** Used to help evaluate causes of diarrhea.

FELBATOL (N) *shipped to outside facility for testing*

FERN TEST

SYNONYMS N/A

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP 2 hours or Routine 4-24 hours. **Special Instructions:** N/A. **Cost:** \$ 22.40

SPECIMEN Type: Vaginal fluid **Container:** Microscope slide **Collection:** Specimen will be taken by physician and placed on a microscopic slide. Allow slide to dry before examination. **Storage:** Send to laboratory immediately. **Patient Preparation:** N/A **Causes for Rejection:** Mislabeled or unlabeled slide.

INTERPRETATION **Normal Range:** No ferning present. **Comments:** N/A. **Use:** Detection of premature rupture of membranes. Positive result indicates presence of amniotic fluid in vaginal fluid.

FERRITIN

SYNONYMS N/A

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 21.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION **Normal Range:** Adult males 17.9 - 464 ng/mL; Adult females (Premenopausal): 6.3 - 132 ng/mL; Adult females (Postmenopausal): 10.2 - 265 ng/mL **Comments:** An observed range of 2.83 – 30.7 ng/mL Ferritin was obtained from subjects with iron deficiency. Less than 10 ng/dL Ferritin usually indicates iron deficiency. **Use:** Evaluation of iron stores in disease states such as anemia and hemochromatosis.

FETAL HEMOGLOBIN DETECTION

SYNONYMS Kleihauer Betke; Fetal Bleed Test

DEFINITION A test that differentiates fetal-type hemoglobin from adult hemoglobin by an acid elution stain to which fetal hemoglobin is resistant, but adult hemoglobin is not.

TEST INCLUDES Determination of the percentage of fetal cells in the maternal blood which is used to

calculate the volume of the fetal hemorrhage. From this volume, determination of the amount (number of vials, 300 ug each) of RhIG needed to prevent the mother from being sensitized (producing allo anti-D) to the fetal red blood cell antigen.

ADMINISTRATION Department: Hematology **Request Form:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** Within 24 - 48 hours **Special Instructions:** 1) Whenever this test is indicated by a positive fetal bleed screen test, the patient's EDTA blood specimen is obtained to insure that the patient receives the proper dosage of RhIG (based on the results of this test) within 72 hours of the fetomaternal hemorrhaging event. 2) Whenever an Rh Negative patient has a repeat positive fetal bleed screen test, the blood bank is to do the following immediately: Notify the ward of this information and inform them that this patient may need more than one vial of RhIG; notify the ward of the fetal bleed test and number of recommended vials. **Cost:** \$ 12.00

SPECIMEN Type: Maternal venous blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** One pink top tube (EDTA) **Collection:** Routine venipuncture collected immediately or as soon as possible after delivery or other fetomaternal hemorrhaging event. If a pink top tube (EDTA) of blood was submitted with the post delivery RhIG request, no additional specimen will be needed. Required information on the tube include: The patient's name, family ID & SSN, the date and time obtained. **Storage:** Submit to laboratory ASAP after collection. **Patient Preparation:** None **Causes for Rejection:** Incomplete, illegible, or incorrect required information on blood tube label and/or lab slip.

INTERPRETATION Normal Range: Normal adult blood will contain less than 1.0% fetal-type hemoglobin. **Use:** This test is used whenever an Rh negative patient (who is a RhIG candidate) has a positive fetal bleed screen test. The Kleihauer-Betke Test determines the dose of RhIG (number of vials) to be administered to prevent sensitization to D positive fetal red blood cells that have entered the patient's blood circulation.

LIMITATIONS 1) Hematological disorders in adults may produce increased levels of fetal-type cells. 2) This test is not performed on: Cord blood; fetal lung aspirates or other body fluid to differentiate between fetal and maternal blood; pre-delivery maternal blood of a patient with a heavy vaginal bleed to determine, in a suspected fetal bleed, if a fetal hemorrhage is occurring or the volume of a suspected fetal hemorrhage.

FETAL SCREEN

SYNONYMS Fetal bleed screen; screen for FMH

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557, SF 556
Availability: Daily **Turnaround time:** ASAP within 2 hours; ROUTINE 4-24 hours. **Special Instructions:** N/A **Cost:** \$ 22.40

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 ml pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** N/A. **Causes for Rejection:** Mislabelled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: Negative. If positive send specimen to hematology for Kleihauer-Betke test. **Comments:** N/A **Use:** To determine the amount of RHIG to be given based on percentage of fetal bleed.

FFP (1-4 Units)

SYNONYMS Fresh Frozen Plasma.

ADMINISTRATION Department: Blood Bank **Request Method and Required Form:** CHCS Order (Request according to the number of units needed) & SF 518 (One SF 518 for each unit requested). **Availability:** Daily. **Turnaround time:** STAT within 1 hour; ASAP within 2 hours; ROUTINE 4-24 hours. **Special Instructions:** Submit 1 SF 518 for each unit requested. On SF 518 annotate: 1) date requested, 2) diagnosis, 3) requesting physician's name, 4) component requested, 5) signature of verifier, 6) date and time verified, 7) anticipated time of need, 8) patient transfusion history. **Cost:** \$ 8.40 per unit of FFP

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** At patients bedside: 1) patient must be positively identified by hospital bracelet on wrist, 2) after patient verification and blood draw, label tube according to collection instructions, 3) sign and verify form SF 518 indicating you have drawn specimen from identified patient. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A **Comments:** N/A. **Use:** Management of bleeding for preoperative patients who require replacement of coagulation factors when specific correctives are not available. Patients with massive transfusion who have abnormal coagulation assays. Patients on coumadin who are bleeding or need to undergo an invasive procedure before vitamin K could reverse coumadin effect. Patients with thrombocytopenic purpura.

FIBRIN DEGRADATION PRODUCTS

SYNONYMS FDP; FBP; Fibrin Breakdown Products; Fibrin Split Products; FSP

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** Requires a special collection tube which must be obtained from the laboratory. **Cost:** \$ 15.40

SPECIMEN Type: Blood **Volume:** 2 mL - do not overfill the tube **Minimum Volume:** 1 mL **Container:** Black top "Thrombo screen" tube **Collection:** Routine venipuncture **Storage:** Transport to laboratory ASAP. **Patient Preparation:** N/A **Causes for Rejection:** Non-clotted specimen; improper collection tube; tube overfilled; improperly labeled specimen.

INTERPRETATION Normal Range: Less than 10 ug/mL; **Panic Value:** Over 40 ug/mL **Comments:** Tube will only take 1 to 2 mL of blood. Do not try to force more than 1 to 2 mL of blood into sample tube. After drawing, mix sample. Blood will clot immediately. **Use:** Test is used for detection of fibrin or fibrinogen breakdown products in serum. Helpful for diagnosing Disseminated Intravascular Coagulation (DIC).

FIBRINOGEN

SYNONYMS Factor I; Fibrinogen Level; Quantitative Fibrinogen

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour, ASAP: 2 hours, Routine: 4-8 hours. **Special Instructions:** Transport specimen immediately to the laboratory. **Cost:** \$ 19.60

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 2.7 mL in a micro tube **Container:** Blue top (Sodium Citrate) tube, micro blue top tube (Sodium Citrate) **Collection:** Routine venipuncture.

If multiple tests are being drawn, draw fibrinogen tube last. If only a fibrinogen is being drawn, draw 1 - 2 mL into another vacutainer tube, discard and then collect the fibrinogen. This collection procedure avoids contamination of the specimen with tissue thromboplastin. **Storage:** Separate and freeze plasma if test is not run within one hour. **Patient Preparation:** Collect specimen 1 hour before next dose of heparin if heparin is being given by intermittent injection. **Causes for Rejection:** Tube not properly filled; hemolysis; specimen improperly labeled.

INTERPRETATION Normal Range: 200 - 400 mg/dL **Comments:** Increased in patients on oral contraceptives. Interpretations of results may be limited if patient is receiving anticoagulant therapy, i.e. heparin administered less than one hour prior to specimen collection. **Use:** Identification of congenital afibrinogenemia, Disseminated Intravascular Coagulation, and fibrinolytic activity.

FK506 (TACROLIMUS) (N) *shipped to outside facility for testing*

FLECAINIDE (N) *shipped to outside facility for testing*

FLUORESCENT TREP. AB-ABS (N) or (B) *shipped to outside facility for testing*

FLUOXETINE PANEL (N) *shipped to outside facility for testing*

FOLATE, RBC (N) *shipped to outside facility for testing*

FOLLICLE STIMULATING HORMONE

SYNONYMS FSH; Follitropin

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$40.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and freeze serum. **Patient Preparation:** In females, last menstrual period is necessary. **Causes for Rejection:** Improperly labeled specimen

INTERPRETATION Normal Range: Male: 1.6 – 9.7 mIU/mL; Female: Follicular: 2.0 – 11.6 mIU/mL; Luteal phase: 1.4 – 9.6 mIU/mL; Post Menopausal: 21.5 - 131 mIU/mL **Comments:** Always performed as a battery with luteinizing hormone. **Use:** Excessive FSH is found in hypogonadism, anorchia, gonadal failure, complete testicular feminization and menopause.

FRAGILE X (Alfigen) *shipped to outside facility for testing*

FREE PSA PANEL (A) *shipped to outside facility for testing*

FREE T3

SYNONYMS Free Triiodothyronine; Free T4; Unbound T3; Triiodothyronine, Free; T3, Free and Serum Free T4

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$19.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen

INTERPRETATION Normal Range: 2.77 – 5.27 pg/mL **Comments:** N/A **Use:** A sensitive test for thyroid function, increased with hyperthyroidism. Free T4 and Thyroid Stimulating Hormone (TSH) are the two tests which comprise thyroid function testing performed in this facility. Total T3 is shipped to BAMC.

FREE T4

SYNONYMS Free Thyroxine; Free T4, Serum; Unbound T4; Thyroxine, Free; T4, Free; Serum Free T4

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$19.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen

INTERPRETATION Normal Range: 0.78 - 2.19 ng/dL **Comments:** N/A **Use:** A sensitive test for thyroid function, increased with hyperthyroidism. Free T4, Free T3 and Thyroid Stimulating Hormone (TSH) are the tests which comprise thyroid function testing performed in this facility. Total T4 is shipped to BAMC.

FUNGUS ANTIBODY PANEL, SERUM (N) *shipped to outside facility for testing*

FUNGUS CULTURE (S) *shipped to outside facility for testing*

G-6-PDH QUANTITATIVE (B) *shipped to outside facility for testing*

GASTRIN (BAMC) *shipped to outside facility for testing*

GC CULTURE

SYNONYMS GC Culture for: endocervical, urethral, or oropharyngeal, anal, joint fluid, Bartholin Gland; Gonorrhea Culture; Neisseria Gonorrhea Culture.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 72 hours **Special Instructions:** Separate laboratory slips must accompany GC specimen if both gram stain and culture are ordered. Pathologist approval must be obtained for ordering. Insure source of specimen, current antibiotic therapy, clinical diagnosis, time of collection, and age of patient are recorded with specimen. This test is best collected at patient's side and inoculated directly to agar plate. Notify the laboratory before collection. **Cost:** \$ 13.00

SPECIMEN Type: Urethral, Endocervical, anal, throat, joint fluid. **Volume:** Ample specimen for culture **Minimum Volume:** Same **Container:** Swab-throat, endocervical, urethral, anal, syringe or tube for joint fluids. **Collection:** Swab the suspected area. a.) For Female: Culture for G.C. from the urethra or vagina as indicated when an endocervical culture is not possible. Gently compress cervix between speculum blades to express any endocervical exudate. Swab in a circular pattern. With swab, inoculate the TM plate in a "Z" formation. b.) For Male: Collect by endourethral swab after stripping toward the orifice to express exudate. With swab, inoculate TM plate in a "Z" formation and discard swab. c.) For Oropharyngeal: Swab back of throat with a Culturette. With swab, inoculate TM plate in a "Z" formation and discard swab. d.) For anal: Swab anus with Culturette, with swab inoculate TM plate in a "Z" formation and discard swab. e.) If swabs not inoculated, at patient's side, swabs must reach lab within 5 minutes of collection. Joint fluid collect as other joint fluids. TM plates used at patient's side collection. **Storage:** If utilized incorrectly, a new specimen must be resubmitted. Do not refrigerate or expose to cold environment. **Patient Preparation:** Avoid collecting urethral specimen until at least one hour after urinating. Instruct patient to wash hands thoroughly, wash penis or vulva with wet sponge and warm water.

Each sponge is discarded after one use. **Causes for Rejection:** Excessive fluid on plate (due to condensation); refrigerated specimens; failure to transport to lab in 15 minutes; improperly labeled on submitted specimen.

INTERPRETATION Normal Range: Neisseria gonorrhea not isolated. **Comments:** Neisseria gonorrhea is very sensitive to lubricants and disinfectants. **Use:** Isolate and identify Neisseria gonorrhea; establish the diagnosis of Gonorrhea. It is better to submit specimen for GEN-PROBE testing for GC. Cases for criminal prosecution need to be handled by notification of pathologist before collection. If organisms other than GC, see respective type/site cultures.

GENITAL, ROUTINE BACTERIAL CULTURE

SYNONYMS More common: Cervical, urethra, vaginal, vulval, penial. (Not for GC or Group B Strep screening.)

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround time:** Routine: 72 hour **Special instructions:** Do not let patient douche 72 hours prior to collection **Cost:** \$ 13.00

SPECIMEN Type: Cervical, urethral, vaginal, vulval, penial **Volume:** Ample specimen on swab. **Minimum Volume:** Same **Container:** Aerobic Culturettes **Collection:** Specimen collected using a speculum without lubricant. Urethral: often proper cleansing the external urethra, insert a urethro genital swab 2 - 4 cm into endo urethra, gently rotate swab and leave it in place for 1 to 2 seconds. **Storage:** Transport to the laboratory within 2 hours. **Patient Preparation:** Urethra: collect specimen at least 2 hours after urination. **Causes for Rejection:** Improperly collected, transported, or labeled specimen.

INTERPRETATION Normal Range: Normal vaginal flora isolated. (Anaerobes, alpha and gamma hemolytic strep., coag-neg staphylococcus, diptheroids (lactobacillus), enteric gram neg. rods). No growth. **Comments:** Vaginal wounds or abscesses need to be indicated. In some cases, normal flora could be significant. Anaerobic culture not acceptable unless an abscess. See GEN-PROBE for Chlamydia or GC. Darkfields are not performed by microbiology. Various situations can cause imbalance of vaginal flora and cause significant growth of yeast. **Use:** N/A

GEN-PROBE (CHLAMYDIA, N. Gonorrhea)

SYNONYMS Chlamydia; C. trachomatis, GC, Neisseria gonorrhea , Chlamydia DNA Probe, GC DNA probe

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Monday through Friday, 0730 to 1600, except Holidays **Turnaround Time:** 1 to 4 days **Special Instructions:** N/A **Cost:** \$ 36.40

SPECIMEN Type: Urethral, Endocervical swabs and eye swab for Chlamydia trachomatis only using male collection swab from the kit. Other sites can be done but are not FDA approved. **Volume:** Adequate specimen on swab **Minimum Volume:** Same **Container:** GEN-PROBE collection system (VIDAS) **Collection:** (1.) Cervical swab specimens: a.) Remove excess mucus from the cervical os and surrounding mucosa using one of the female collection swabs provided in the cervical collection kit and discard the swab. b.) Insert the second swab from the collection kit into the endocervical canal. c.) Rotate the swab for 10 to 30 seconds in the endocervical canal to ensure adequate sampling. d.) Withdraw the swab carefully; avoid any contact with the vaginal mucosa. e.) Fully insert one swab into a GEN-PROBE transport tube. f.) Break the swab shaft at the score line to fit the tube; use care to avoid splashing of contents. Cap the tube tightly. (2.) Urethral swab specimens: a.) Patient should not have urinated for at least 1 hour prior to sample collection. b.) Collect the urethral exudate or insert the male collection swab from the urethral/conjunctival collection kit 2 to 4 cm into the urethra using a rotating motion to facilitate insertion. c.) Once inserted, rotate the swab gently using sufficient pressure to ensure the swab comes into contact with all urethral surfaces. Allow the swab to remain inserted for 2 to 3 seconds. d.) Withdraw the

swab. e.) Fully insert the swab into a GEN-PROBE transport tube. f.) Break the swab shaft at the score line to fit the tube; use care to avoid splashing of contents. Cap the tube tightly. **Storage:** Immediately transport to laboratory. **Patient Preparation:** Urethral: Patient should urinate 1 hour prior to specimen collection **Causes for Rejection:** Specimen not labeled; use of different swabs other than the Darcon in the transport kit system. Specimen improperly submitted. Placing more than one swab in the collection tube can affect results.

INTERPRETATION Normal Range: No Chlamydia detected. Negative for Chlamydia trachomatis. No Neisseria gonorrhea detected or negative for Neisseria gonorrhea. **Comments:** Proper sample collection is extremely important in testing samples for the presence of Chlamydia. The specimen should contain as many columnar epithelial cells as possible. For specimens that test positive or equivocal, confirmation testing will be performed at next testing period. **Use:** Aids in the diagnosis of Chlamydia trachomatis and Neisseria gonorrhea infection.

GENTAMICIN

SYNONYMS Gent; Garamycin

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** Draw trough level: 30 minutes before dose. Draw peak level: 30 to 60 minutes after end of 30 minute I.V. infusion or 60 minutes after I.M. dose. Specimens should be drawn at steady state, after fifth dose, if drug given every 8 hours or after third dose, if drug given every 12 hours. Label specimens "peak" and "trough". **Cost:** \$35.00

SPECIMEN Type: Blood **Volume:** 3 mL **Minimum Volume:** 1 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Transport to laboratory ASAP. Separate within 1 hour after collection **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; untimely delivery of specimen to laboratory.

INTERPRETATION Normal Range: Trough: < 1 ug/mL; Peak: 4- 10 ug/mL **Panic Range:** Toxic (peak) greater than 10 - 12 ug/mL; Toxic (trough) greater than 2 ug/mL. **Comments:** Specimen must be frozen prior to and after performing test if a Beta-lactam antibiotic is also present because of potential inactivation of aminoglycosides. **Use:** Therapeutic levels are necessary because of poor predictability of levels from dosage when attempting to reach target levels to treat resistant organisms; toxicity assessment.

GGT

SYNONYMS Gamma glutamyl transferase; GGTP; GTP; GT; Gamma Glutamyl Transpeptidase

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** The patient ideally should fast for 8 hours prior to collection of the specimen. Since elevations may occur with phenytoin or phenobarbital therapy, 5'nucleotidase may be preferable in such patients. **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Male 15 - 73 U/L; Female 12 - 435 U/L **Comments:** N/A **Use:** A biliary enzyme that is especially useful in diagnosis of obstructive jaundice, intrahepatic cholestasis and pancreatitis; useful in the diagnosis of chronic alcoholic liver disease.

GIARDIA ANTIGEN, STOOL

SYNONYMS Giardia testing (EIA), Ova and Parasites

TEST INCLUDES: If a stool Ova and Parasites (O &P) exam is ordered, the specimen is tested first. This procedure replaces the routine Stool Ova & Parasite exam. In special instances such as; history of Travel to areas where intestinal parasites are indigenous; when stool culture and Giardia antigen screen Are both negative while clinical symptoms persist, routine Ova & Parasite exams will be sent to a reference Laboratory for testing upon clinician's request.

ADMINISTRATION: **Department:** Microbiology/Serology **Request Method:** CHCS order or Miscellaneous SF 553 if computer is down **Availability:** daily **Turnaround Time:** Test performed on Monday and Thursday, exception National holidays. **Cost:** \$36.00

SPECIMEN Type: Unpreserved Stool, Stool in 10% formalin fixative vials or Cary Blair transport media vials are unacceptable **Volume:** In vials, no more than to mark on vial **Minimum Volume** at least 5 gm **Container:** Unpreserved stool in a clean plastic container. Cary Blair, 10% formalin or PVA fixed specimens need to be submitted in separate containers in case a full Ova & Parasite exam is requested. **Collection:** N/A **Storage:** Unpreserved stool; 2-8 degrees C, <48 hours or -20 to -70 degrees C, >48 hours. 10% formalin stool; 20-25 degrees C or 2-8 degrees C, <2 weeks. C & S par-pak (Cary Blair) 2 to 8 degrees C or -20 to -70 degrees C, <1 week. **Causes for Rejection:** Concentrated specimens, PVA fixed specimens

INTERPRETATION Normal Range: Negative **Comments:** Specimens are held for 7 days in case there is A need for referral for concentration and trichrome stain. See TEST INCLUDES section above. **Limitations:** Prevalence of Giardia infections varies in different populations and geographic areas.

GLUCOSE (SERUM/PLASMA)

SYNONYMS Serum Glucose; Blood Sugar; Fasting Glucose

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A Fasting specimen is preferred. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Gray, red or green top tube **Collection:** Routine venipuncture **Storage:** Transport to laboratory within 30 minutes. Glucose will drop 5 - 10 mg/dl per hour in unseparated, room temperature blood if not collected in gray top tube. **Patient Preparation:** Patient must be fasting. **Causes for Rejection:** Improperly labeled specimen; specimen not delivered to laboratory within 30 minutes if not in gray top tube.

INTERPRETATION Normal Range: Fasting: Male: 75 - 110 mg/dL; Female: 65 - 105 mg/dL, Panic Values for glucose are <40 or >450 mg/dL. **Comments:** Two consecutive fasting blood glucose results above 126 mg/dL is conclusive diagnosis for diabetes mellitus. **Use:** Establish the diagnosis of diabetes mellitus; evaluation of disorders of carbohydrate metabolism; evaluation of acidosis and ketoacidosis; evaluation of dehydration, coma, hypoglycemia, neuroglycopenia; to monitor therapy in diabetics; evaluate presence of insulinoma; to work up patients with real or apparent alcoholism; investigation of polyuria, polydipsia, polyphagia, weight loss and dehydration.

GLUCOSE TOLERANCE TESTING

SYNONYMS GTT; OGTT; Oral Glucose Tolerance Test, OB GTT Panel, 1 HR Pregnancy screen, 2 HR Postprandial glucose, 2 hour PP, 3 HR GTT, and 5 HR GTT

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Collected Monday through Friday This is a scheduled test. Patient must come to the laboratory, Monday through Friday, 0730 to 1600, to schedule this test and pick up special diet. He/she must have their ID card and medical card to present to laboratory personnel when scheduling this test. Patient must report to the laboratory on the day of testing at 0730 and should be fasting for at least 12 hours. **Turnaround Time:** 4 to 8 hours **Special Instructions:** A Fasting blood glucose, first hour,

second hour and hourly thereafter up to time specified (commonly a third hour sample is drawn. A fourth and sometimes a fifth hour sample may be ordered depending upon physician orders). If fasting glucose results are above 126 mg/dL, we will consult the physician for discontinuation. **Cost:** 1 HR Pregnancy screen \$9.80, 2 HR PP \$15.40, 3 HR GTT \$28.00 and 5 HR GTT \$44.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Grey top tube
Collection: After fasting, blood specimen is obtained, the serum glucose test is processed. If this result is within normal range, administer Glucola (oral glucose solution). During the test, the patient must remain seated and consume only water after Glucola has been administered. **Storage:** Separate and refrigerate
Patient Preparation: Patient should not smoke or drink coffee prior and during test. Patient must be fasting 12 hours prior to test but no more than 16 hours. Patient should not drink alcoholic beverages after the evening meal on the preceding day. Provide laboratory with list of any medications patient is taking. Patient must be ambulatory for accuracy of test. **Causes for Rejection:** Time not marked on tubes; patient not appearing in the morning in the fasting state; a stressed patient; a patient following surgery; a patient with infection; a patient on corticosteroids; a patient vomiting after ingestion of glucola and before the test is completed.

INTERPRETATION Normal Range: Requires interpretation (See report) **Comments:** Choose Glucose Tolerance Test indicated for patient from CHCS menu. Optimal diagnostic value when run for at least 2 hours postprandial or at least 1 hour post glucola ingestion. However 5 hour post glucola ingestion may be requested. Includes fasting, 1 hour, 2 hour and 3-5 hour serum glucose when ordered. **Use:** Establishes the presence of glucose intolerance. **Limitations:** Many drugs interfere. They include: Steroids, oral contraceptives, diuretics, and anti-hypertensive drugs including thiazides, furosemide, anticonvulsants, psychoactive drugs, antituberculous agents and anti-inflammatory drugs including salicylates. Patient should not be stressed.

GLUCOSE (URINE)

SYNONYMS Random Urine Glucose

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** Sterile Cup or container **Collection:** Random **Storage:** Refrigerate after collection **Patient Preparation:** N/A
Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: Normal ranges not established **Comments:** May be elevated during rapid intestinal absorption and endocrine disorders. Increases may also be seen due to stress, excitement, MI, testing after a heavy meal, and testing soon after administration of IV glucose. **Use:** To aid in the evaluation of glucosuria, renal tubular defects, and diabetic management.

GLUCOSE URINE 24 HOUR PANEL

SYNONYMS Urinary Sugar Test; Sugar, Quantitative, Urine; Urine Glucose Test

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: N/A **Cost:** \$17.00

SPECIMEN Type: Urine **Volume:** all of 24 hour specimen **Minimum Volume:** Same **Container:** A sterile container provided by the laboratory. **Collection:** 24 hour specimen, instruct patient to void at 0800 and discard urine. Then collect all urine including the final specimen voided at the end of the 24 hour collection period, i.e., 0800 the next morning **Storage:** Refrigerate during and after collection period
Patient Preparation: N/A **Causes for Rejection:** Improper collection; no time interval on requisition;

improperly labeled specimen; non refrigerated specimen.

INTERPRETATION Normal Range: 24 hour: < 500 mg/day **Comments:** May be elevated during rapid intestinal absorption and endocrine disorders. Increases may also be seen due to stress, excitement, MI, testing after a heavy meal, and testing soon after administration of IV glucose. **Use:** To aide in the evaluation of glucosuria, renal tubular defects, and diabetic management.

GLYCATED HEMOGLOBIN PANEL

SYNONYMS Hgb A1C; Hemoglobin, Glycosylated; A1C; A1C Hgb; Hemoglobin, A1C, GHb

TEST INCLUDES Calculated HbA1C; Glycated Hemoglobin

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** Routine: 4 to 24 hours. If test results are expected on the same day as collection, specimens must be collected by 0930 and must arrive in Special Chemistry no later than 1130 **Special Instructions:** Patient need not be fasting. **Cost:** \$21.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Purple top tube (EDTA) **Collection:** Routine venipuncture **Storage:** Refrigerate **Patient Preparation:** Fasting specimens are not required. **Causes for Rejection:** Clotted specimen; improperly labeled specimen.

INTERPRETATION Normal Range: GHb %: 4.8 - 7.8 % Calculated % A1C: 4.4 - 6.4 % **Comments:** Specimen must be less than 7 days old to perform testing. Testing at 3 to 4 month intervals is suggested for patients with Type I Diabetes. Glycosylated Hemoglobin predicts the progression of retinopathy. **Use:** Monitor patient compliance regarding glucose intake/insulin therapy to assess long-term glucose control in diabetes. The measurement reflects the level of control present over the preceding 100 to 120 days.

GRAM STAIN, GENERAL

SYNONYMS Bacteria Smear; Smear, Gram Stain; Stain, Gram

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine 4-24 hrs **Special Instructions:** Specimen site, current antibiotic therapy and clinical diagnosis must be indicated in CHCS order or on Miscellaneous slip. **Cost:** \$ 9.80

SPECIMEN Type: Depending on specimen **Volume:** Enough specimen to qualify and read smear **Minimum Volume:** Same **Container:** Glass Smear for GC specimen (male only). See other types culture for proper container of specific specimen. **Collection:** See specific source. If slide submitted, identify by annotating with pencil. **Storage:** Deliver slide to laboratory the same day of collection. **Patient Preparation:** Call laboratory for information. Depends on the source of the specimen. **Causes for Rejection:** Insufficient specimen volume; improperly labeled or unlabeled glass slide; improperly submitted.

INTERPRETATION Normal Range: Depends upon the source of the specimen. **Comments:** For detection of Tubercle bacilli, an acid fast stain must be requested. A Gram stain is not reliable for diagnosis of cervical, rectal, pharyngeal or asymptomatic urethral gonococcal infections. Gram stain is also used by the laboratory to evaluate the appropriateness of the specimen for culture (usually sputum, wounds, vaginal/cervical). Gram stain on urines requires special notification and not routinely order or processed, please call laboratory first. If slides submitted, needs to be rolled on slide and thin. **Use:** To establish the presence of potentially pathogenic organisms; to determine presence of bacteria, yeast, neutrophils, and epithelial cells.

GROUP A STREP SCREEN (THROAT) CULTURE

SYNONYMS None

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** Generally 24 hours **Special Instructions:** Inform laboratory of any current antibiotic therapy and clinical diagnosis. Do not swab tongue or uvula. **Cost:** \$ 16.80

SPECIMEN Type: Throat swab **Volume:** Adequate swabbing of throat **Minimum Volume:** Same **Container:** Aerobic sterile Culturette **Collection:** The tongue should be depressed while both Tonsilla pillars and pharynx are swabbed. The tongue and uvula should be avoided. **Storage:** Deliver to laboratory within 24 hours. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; untimely delivery of specimen to the laboratory, greater than 24 hours.

INTERPRETATION Normal Range: No Beta-hemolytic Streptococcus isolated **Comments:** Group A Beta-hemolytic Streptococcus is generally susceptible to penicillin and its derivatives. Therefore, susceptibility is not routinely determined. Do not swab throat in cases of acute epiglottitis! This procedure does not include screening for other possible upper respiratory pathogens. If a culture for Neisseria gonorrhea is also needed, refer to Endocervical, Urethral and Oropharyngeal for GC Culture Test. **Use:** Isolate and identify Group A Beta-hemolytic Streptococcus from the throat.

H. INFLUENZA TYPE B VACCINE RESPONSE (N) *shipped to outside facility for testing*

HAM'S TEST (N) *shipped to outside facility for testing*

HAPTOGLOBIN (B) *shipped to outside facility for testing*

HBSAG CONFIRM (N) *shipped to outside facility for testing*

HCV AB (A) *shipped to outside facility for testing*

HCV RNA PCR, QUALITATIVE (A) *shipped to outside facility for testing*

HCV RNA PCR, QUANTITATIVE (A) *shipped to outside facility for testing*

HEAVY METAL SCREEN (B) *shipped to outside facility for testing*

HELICOBACTER PYLORI (QUAL)

SYNONYMS H. pylori test

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Microbiology SF 553 if computer down **Availability:** Monday through Friday, 0730 to 1600, except Holidays **Turnaround time:** 48 hours **Special instructions:** N/A **Cost:** \$32.20

SPECIMEN Type: Blood, serum, plasma **Volume:** Blood 7 mL **Minimum Volume:** Blood 4 mL **Container:** Red top blood collection tube, 7 mL **Collection:** N/A **Storage:** Serum: Collect and prepare serum samples by standard laboratory procedures. Serum samples may be stored refrigerated at 2°- 8°C for up to 72 hours. For longer storage, freeze at or below -20°C in vials with air tight seals. Plasma: Collect an anticoagulated blood sample (sodium heparin or lithium heparin; potassium EDTA may decrease Test Line intensity) using standard laboratory procedures. Separate plasma by centrifugation. Plasma samples may be stored refrigerated at 2°- 8°C for up to 72 hours; for longer storage, freeze at or below -20°C. Whole Blood: Collect an anticoagulated blood sample (sodium heparin or lithium heparin) following standard laboratory procedures. Whole blood samples may be stored refrigerated (2°-8°C) if not used immediately, but must be tested within 24 hours of collection. **Patient Preparation:** N/A **Causes for Rejection:** Improper collected and labeled specimen visibly hemolyzed and lipemic samples.

INTERPRETATION Normal Range: Negative **Comments:** In the United States, approximately 11% of symptomatic individuals with normal gastric histology have been reported to be colonized with *H. pylori*, while 63% of those with chronic gastritis yielded positive culture biopsies. Approximately 80% to 100% of individuals with signs and symptoms of other gastrointestinal conditions such as duodenal ulcers, are reported to be positive for *H. pylori* infection. **Use:** Presents of IgG antibody for *H. pylori* infection. **Limitations:** Does not indicate titer of the antibody. Test used only to evaluate patients with clinical signs and symptoms suggestive of gastrointestinal disease. Positive result does not distinguish between active infection and colonization, therefore, not a conclusive indicator of gastrointestinal disease. The performance characteristics of this test have not been established in a pediatric population. A negative result indicates that *H. pylori*-specific IgG antibody is not present, or is present at a level below the detection threshold of the test. Samples obtained too early during infection may not contain detectable antibodies. If *H. pylori* infection is suspected and a negative result is obtained, a second sample should be obtained and tested 2 to 7 weeks later.

HEMATOCRIT, AUTOMATED

SYNONYMS HCT; Microhematocrit; Packed Cell Volume; PCV

ADMINISTRATION Department: Hematology **Request Method** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 5.60

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 1 mL or 0.5 mL in a properly filled microtainer. **Container:** Purple top tube (EDTA) tube or purple microtainer (EDTA). **Collection:** Routine venipuncture **Storage:** Refrigerate if specimen is not brought to the laboratory within 2 hours after collection. **Patient Preparation:** N/A **Causes for Rejection:** Clotted or hemolyzed specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Male: 42 - 52%; Female: 37- 47% **Comments:** N/A **Use:** Evaluation of anemia, blood loss hemolytic anemia, polycythemia and other conditions.

HEMATOCRIT, MANUAL

SYNONYMS HCT; Microhematocrit; Packed Cell Volume; PCV

ADMINISTRATION Department: Hematology **Request Method** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 5.60

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 1 mL or 0.5 mL in a properly filled microtainer or 2 microhematocrit tubes filled 2/3 - 3/4 full. **Container:** Purple top tube (EDTA) tube or purple microtainer (EDTA) or microhematocrit tubes. **Collection:** Routine venipuncture **Storage:** Refrigerate if specimen is not brought to the laboratory within 2 hours after collection; place on mixer until test is performed. **Patient Preparation:** N/A **Causes for Rejection:** Clotted or hemolyzed specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Male: 42 - 52%; Female: 37- 47% **Comments:** N/A **Use:** Evaluation of anemia, blood loss hemolytic anemia, polycythemia and other conditions.

HEMOGLOBIN

SYNONYMS Hgb; Hb

ADMINISTRATION Department: Hematology **Request Method** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours **Special**

Instructions: N/A **Cost:** \$ 5.60

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 1 mL, or 0.5 mL in microtainer
Container: Purple top tube (EDTA) or purple microtainer (EDTA) **Collection:** Routine venipuncture
Storage: Store at room temperature. Run within 12 hours. **Patient Preparation:** N/A **Causes for Rejection:** Clotted or hemolyzed specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Male: 13 - 18 g/dL; Female: 12 - 16 g/dL **Comments:**
Increased in severe burns, dehydration, prolonged vomiting, and intestinal obstruction. **Use:** Evaluation of anemia, blood loss, hemolysis, polycythemia and other conditions.

HEMOGLOBIN ELECTROPHORESIS (B) *shipped to outside facility for testing*

HEMOSIDERIN, QUALITATIVE (N) *shipped to outside facility for testing*

HEPARIN, UNFRACTIONATED (N) *shipped to outside facility for testing*

HEPATIC (CHEM) PANEL

SYNONYMS Hep Panel; LFTs; Liver Test; Liver Panel

TEST INCLUDES AST; ALT; Total Bilirubin; Albumin; Alk. Phosphatase **NOTE** GGT must be ordered separately

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:**
N/A **Cost:** \$ 16.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:**
N/A **Causes for Rejection:** Improperly labeled specimen, and hemolyzed specimens.

INTERPRETATION Normal Range: See individual tests **Comments:** N/A **Use:** Assessing the effects of hepatotoxic drugs, and liver status.

HEPATITIS A VIRUS ANTIBODY IgM (A) *shipped to outside facility for testing*

HEPATITIS B CORE ANTIBODY IgM (A) *shipped to outside facility for testing*

HEPATITIS B SURFACE ANTIBODY

SYNONYMS HbsAb, Hepatitis B immunity test

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** Routine 4-24 hours **Special Instructions:** N/A

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and freeze serum **Patient Preparation:** N/A
Causes for rejection: improperly labeled specimen

INTERPRETATION Normal Range: Negative **Comments:** If results are positive for HbsAb then this test indicates immunity to Hepatitis B Virus infection. **Use:** Diagnosis for susceptibility to hepatitis B virus prior to or following HBV vaccination and for seroconversion from past HBV infection.

HEPATITIS B SURFACE ANTIGEN

SYNONYMS HbsAG

ADMINISTRATION **Department:** Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** Routine 4-24 hours **Special Instructions:** N/A
Cost: \$ 16.00

SPECIMEN **Type:** Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and freeze serum **Patient Preparation:** N/A
Causes for Rejection: improperly labeled specimen

INTERPRETATION **Normal Range:** Negative **Comments:** Present in acute and chronic carrier states. If results are positive patient is infectious. **Use:** Diagnosis of acute, chronic or carrier states of hepatitis.

HEPATITIS B VIRUS DNA QUANTITATIVE (N) *shipped to outside facility for testing*

HEPATITIS BE ANTIGEN & ANTIBODY PANEL (BAMC) *shipped to outside facility for testing*

HEPATITIS DELTA ANTIBODY (N) *shipped to outside facility for testing*

HERPES CULTURE (B) *shipped to outside facility for testing*

HERPES I/II ANTIBODY PANEL (A) *shipped to outside facility for testing*

HERPES SIMPLEX IgG (BAMC) *shipped to outside facility for testing*

HETERO MONONUCLEOSIS (MONO)

SYNONYMS Mono Test; Monospot, Infectious Mononucleosis Screening Test

ADMINISTRATION **Department:** Serology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** Routine 4-24 hours or ASAP (2 hours)
Special Instructions: N/A **Cost:** \$17.00

SPECIMEN **Type:** Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Red top tube, preferred; however, a purple top tube (EDTA) is acceptable **Collection:** Routine venipuncture **Storage:** Separate serum and store up to 48 hours between 2°- 8° C. If longer storage, freeze at -20° C or below.
Patient Preparation: N/A **Causes for Rejection:** Improperly labeled specimen, hemolytic and lipemic specimen.

INTERPRETATION **Normal Range:** Negative, Previous exposure **Comments:** 1.) In patients with symptoms indicating IM, a positive heterophile antibody result is diagnostic, and no further testing is necessary. During the acute phase of illness, IM-specific heterophile antibodies are detectable in 80-85% of IM cases. Humoral responses to primary infections appear to be quite rapid. Moderate to high levels of heterophile antibodies are seen during the first month of illness and decrease rapidly after week four. 2.) Positive test results may persist for months or even years due to the presence of persistent IM heterophiles. This may occur with or without any clinical symptoms or hematological evidence of IM. Conversely, a confirmed heterophile antibody test may indicate an occult infection. In fact, detection of IM prior to onset of clinical symptoms has been reported. 3.) Some patients remain persistently negative, even though there may exist hematological and clinical evidence of IM. In some of these patients, serological evidence for a diagnosis of cytomegalovirus infection, toxoplasmosis, or viral hepatitis, as well as others, have been found as well as others, have been found. **Use:** To detect the antibody produced in response to the Epstein-Barr viruses (both IgG and IgM). **Limitations:** 1.) As is the case with any diagnostic procedure, the results obtained by this kit yield data which must be used only as adjunct to other information available to the physician. 2.) Although most patients will have a detectable heterophile level within three weeks of infection, occasionally a patient with strong clinical signs of IM may take as long as three months to develop a detectable level. If further testing is desired, collect additional specimens every

few days and retest. 3.) Some segments of the population who contract IM do not produce measurable levels of heterophile antibody. Approximately 50% of the children under 4 years of age who have IM may test as IM heterophile negative. EBV-specific laboratory diagnosis may be helpful in these cases. 4.) Some individuals are reported to maintain a low but persistent level of heterophile antibodies long after their primary illness. Heterophile antibodies have been detected in blood specimens taken more than one year after the onset of the illness. Such false positive test results occurring in 2-3% of patients can be excluded by EBV-specific serology. 5.) The IM heterophile antibody has been associated with disease states other than IM, such as leukemia, cytomegalovirus, Burkitt's lymphoma, rheumatoid arthritis, adenovirus, viral hepatitis, and Toxoplasma gondii. In primary infections of adults with clinically atypical diseases, EBV-specific laboratory diagnosis may also be helpful. 6.) Very high positive samples may produce weakened test signal due to prozone effect. 7.) The following potentially interfering substances do not interfere with infectious mononucleosis heterophile antibody determinations in the UNISTep® Mono Assay up to the levels shown below: Human Albumin - 15 g/dL, Bilirubin - 60 mg/dL, Hemoglobin - 1 g/dL, Triglycerides - 1,300 mg/dL

HISTOPATHOLOGY, includes Breast Biopsy and Frozen Section

SYNONYMS Biopsy; Gross and Microscopic Pathology; Pathologic Examination; Surgical Pathology; Tissue Examination; Skin Biopsy; Muscle Biopsy; Kidney Biopsy; Lymph Node Biopsy; Organ Biopsy

ADMINISTRATION Department: Anatomic Pathology **Request Form:** Tissue Examination SF 515 **Availability:** Daily Monday through Friday, 0730 to 1500 **Turnaround Time:** 24 to 48 hours, on an uncomplicated case **Special Instructions:** All surgical pathology specimens should be electronically ordered in CHCS by selecting TE (Tissue Exam) for outpatient specimens. Inpatient specimens should be accompanied by one copy of and SF 515. Specimens received after 1400 will be processed on the following workday. **Frozen Section: Request Form:** add Frozen Section Consultation FS MEDDAC Form 230 **Availability:** Notify Pathologist prior to procedure **Turnaround Time:** 15 to 60 minutes, dependent on amount of testing needed. **LIMITATIONS:** Bone or heavily calcified tissue cannot be cut. Tissues dominated by fat are technically difficult and may not be amenable to frozen section. Sampling errors can lead to false negative diagnoses. Tissue is consumed in the process and tiny critical specimens will not be risked. **Cost:** Level I: Gross only \$14.00 (i.e. teeth, newborn foreskins, cataracts, etc.); Level II: \$28.00 (i.e. appendix, fallopian tube, hernia, etc.); Level III: \$40.60 (i.e. ganglion cyst, tonsils, vas deferens); Level IV: \$88.20 (i.e. colon bx, esophagus bx, placenta other than third trimester); Level V: \$152.60 (i.e. cervix conization, breast mastectomy, placenta third trimester); Level VI: \$205.80 (i.e. colon, segmented resection for tumor, small intestine, resection or tumor, uterus, with or without tubes and ovaries, neoplastic)

SPECIMEN Type: Standard Tissue, fixed in formalin **Volume:** All of tissue, fixed in formalin **Minimum Volume:** Same **Container:** Must be leak-proof. Neck of container should not be smaller than its diameter. Use approximately 10 to 20 times as much fixative solution as the bulk of the tissue. **Collection:** Biopsy by physician **Storage:** In fixative solution at room temperature **Patient Preparation:** Standard surgical preparation. **Causes for Rejection:** Improperly labeled specimen, or those with improper forms or inadequate history will be returned to the OR/clinic for corrections.

SPECIMEN Type: Breast Surgically obtained breast tissue. **Volume:** All of tissue, unfixed **Minimum Volume:** Same **Container:** If submitted from OR by needle localization, place fresh tissue in a ziplock type bag and deliver immediately to Mammography. Mammography then sends the specimen and an x-ray of the breast tissue to Anatomical Pathology. If collected in the clinic or on one of the wards by biopsy submit specimen in a sterile cup with a screw top lid. Place a sterile saline-soaked gauze in the cup to keep the specimen moist. Pathology must be notified prior to sending the specimen, preferably the day before to permit scheduling around meetings, to ensure that a pathologist is available to receive it directly. **Collection:** Needle localization or biopsy by physician **Storage:** Deliver fresh tissue immediately to lab. **SPECIMEN Type: Frozen Section** Fresh tissue biopsy in sterile container **Volume:** All of tissue removed **Minimum Volume:** Same **Container:** Properly labeled sterile container with screw-top lid, tightly sealed with NO added fixative **Collection:** N/A **Storage:** Bring to pathology immediately without delay **Causes for Rejection:** Specimen in fixative

INTERPRETATION General Normal Range: N/A **Comments:** N/A **Use:** Histopathologic diagnosis
Limitations: Tissue fixed in formalin cannot be cultured. Cultures are best obtained in the OR where a sterile field exists. Consult with Microbiology as to specific specimen types. Certain tissues-kidney, muscle, lymph node, brain and breast, require special handling. Consult with Pathologist prior to biopsy.

INTERPRETATION Breast Use: For evaluation of palpable and mammographically located breast lesions. Those with lesions of sufficient size as determined by the pathologist will undergo frozen section analysis for determination of the presence of cancer. If more than 1 cc of solid tumor is present based on frozen section, a sample will be sent automatically for ER and PR receptors. If recognizable lesions are < 1 cc, the tissue will be fixed in formalin and processed normally. Paraffin fixed tissue can be sent for immunohistologic determination of ER and PR receptors if necessary. Ploidy studies may be arranged through the pathologist as needed

INTERPRETATION Frozen Section Use: To establish rapid histopathologic diagnosis of a pathologic process; occasionally to ascertain if cultures are indicated; for rapid diagnosis for direction of fresh tissues for subsequent special studies; determination of spread of disease; determination of adequacy of biopsy; for evaluation of unanticipated findings.

HIV (VIROMED) *shipped to outside facility for testing*

HLA ANTIGEN B5 (N) *shipped to outside facility for testing*

HLA-A,B LOCUS TYPING (N) *shipped to outside facility for testing*

HLA-B27 (N) *shipped to outside facility for testing*

HOMOCYSTEINE (N) *shipped to outside facility for testing*

HTLV-1 (N) *shipped to outside facility for testing*

HUMAN GROWTH HORMONE (B) *shipped to outside facility for testing*

HYDROXYPROLINE, TOTAL 24 HOUR URINE (N) *shipped to outside facility for testing*

IgG SUBCLASSES PANEL (N) *shipped to outside facility for testing*

IMMEDIATE SPIN CROSSMATCH

SYNONYMS IS Crossmatch; IS Xmatch

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF 556
Availability: Daily **Turnaround Time:** STAT within 1 hour; ASAP within 2 hours; ROUTINE within 4-24 hours **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of coagulation and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** N/A. **Causes for Rejection:** Mislabeled specimen or SF 518's grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: Compatible. **Comments:** N/A. **Use:** To determine if patients sera has any antibodies directed against donor antigens.

IMMUNOGLOBULINS PANEL (B) *shipped to outside facility for testing*

INFLUENZA ANTIBODY (Types A&B) (N) *shipped to outside facility for testing*

INSECT VENOM PANEL (N) *shipped to outside facility for testing*

INSULIN (B) *shipped to outside facility for testing*

INSULIN ANTIBODIES (N) *shipped to outside facility for testing*

INSULIN GROWTH FACTOR (B) *shipped to outside facility for testing*

INTACT PTH (B) *shipped to outside facility for testing*

INTRAVASCULAR DEVICES CULTURE Contact microbiology division for instructions at 596-9866

INTRINSIC FACTOR BLOCK ANTIBODY (N) *shipped to outside facility for testing*

IRON PANEL

SYNONYMS TIBC; Total Iron Binding Capacity

TEST INCLUDES Serum Iron, Total Iron Binding Capacity, % Transferrin Saturation, Ferritin

ADMINISTRATION Department: Chemistry ***Request Method:*** CHCS order or Miscellaneous SF 557
Availability: Monday - Friday ***Turnaround Time:*** Routine: 4 to 24 hour ***Special Instructions:*** Serum iron levels are 30% higher in the morning and blood levels should be determined on fasting A.M. samples. Separate serum from cells as soon as possible. Avoid hemolysis. ***Cost:*** \$ 48.00

SPECIMEN Type: Blood ***Volume:*** 15 mL ***Minimum Volume:*** 7 mL ***Container:*** Red top tube
Collection: Routine venipuncture. Blood should be collected before other specimens which require anticoagulated tubes. ***Storage:*** Stable for 7 days if refrigerated at 4 degrees C. ***Patient Preparation:*** Specimen should be drawn fasting in the morning. Collect sample before patient is given therapeutic iron or blood transfusion therapy. Iron determinations on patients who have had blood transfusions should be delayed several days. ***Causes for Rejection:*** Hemolysis; improperly labeled specimen.

INTERPRETATION ***Normal Range:*** TIBC: 250 - 450 mg/dL, % Transferrin Saturation: Males 9 – 55%, Females 13 - 59 %. See Iron and Ferritin for normal values. ***Comments:*** Except for iron poisoning, a serum iron without TIBC or transferrin is of limited value. Ferritin levels are also useful for iron deficiency. ***Use:*** Differential diagnosis of anemia, especially with hypochromia and/or low MCV. The percent saturation sometimes is more helpful than the iron result for iron deficiency anemia.

IRON SERUM/PLASMA

SYNONYMS Fe; Fe⁺⁺

ADMINISTRATION Department: Chemistry ***Request Method:*** CHCS order or Miscellaneous SF 557
Availability: Daily ***Turnaround Time:*** Routine: 4 to 24 hour ***Special Instructions:*** Serum iron levels are 30% higher in the morning and blood levels should be determined on fasting A.M. samples. Separate serum from cells as soon as possible. Avoid hemolysis. ***Cost:*** \$14.00

SPECIMEN Type: Blood ***Volume:*** 7 mL ***Minimum Volume:*** 3 mL ***Container:*** Red top tube
Collection: Routine venipuncture. Blood should be drawn before other specimens which require anticoagulated tubes. ***Storage:*** Stable for 7 days, if refrigerated at 4 degrees C. ***Patient Preparation:***

Specimen should be drawn fasting in the morning. Draw sample before patient is given therapeutic iron or blood transfusion therapy. Iron determinations on patients who have had blood transfusions should be delayed several days. **Causes for Rejection:** Hemolysis; improperly labeled specimen.

INTERPRETATION Normal Range: Iron: Male 49 – 181 mcg/dL, Females 37 - 170 mcg/dL

Comments: Except for iron poisoning, a serum iron without TIBC or transferrin is of limited value. Ferritin levels are also useful for iron deficiency. **Use:** Differential diagnosis of anemia, especially with hypochromia and/or low MCV. The percent saturation sometimes is more helpful than the iron result for iron deficiency anemia.

KIDNEY STONE ANALYSIS (AFIP) *shipped to outside facility for testing*

KOH PREPARATION

SYNONYMS Potassium Hydroxide Preparation; Prep, KOH

DEFINITION KOH is used to clear cellular material to look for intracellular fungal elements

TEST INCLUDES Can be ordered with wet prep or separately.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** daily, except Holidays **Turnaround Time:** 3 hours, excluding weekends and holidays **Special Instructions:** Specific source of the specimen and clinical diagnosis must be noted on requisition slip. **Cost:** \$ 7.00

SPECIMEN Type: Vaginal or cervical swab, skin scraping **Volume:** Adequate specimen **Minimum Volume:** Same **Container:** Sterile aerobic Culturette, for skin dry screw cap container also, slides, KOH added, coverslipped, labeled on slide and slide transport container with patients name, patients identification number and accession number or swab, in red top blood collection tube, with approximately 0.5 mL sterile saline **Collection:** Specimen collected using a speculum without lubricant. The mucosa of the posterior vagina may be swabbed. The swab is placed in a Culturette holder. Transport immediately so swab or slide will not dry. For skin scraping, edge of scalpel is used to scrape the infected epidermal area into a dry closed container. For vaginal area, do not douche 3 days prior to collection. **Storage:** Do not refrigerate. Transport to laboratory within 15 minutes. **Patient Preparation:** See Collection **Causes for Rejection:** Dried specimen with delayed submittal time, greater than 15 minutes; uncrushed media compartment; improperly labeled specimen.

INTERPRETATION Normal Range: No yeast or fungal elements seen. **Comments:** Used only for fungal elements that maybe intercellular. Order wet prep for indication of extracellular fungal elements, bacterial, and cellular identify culture (as clue cells). **Use:** Determine presence of fungi in vaginal secretion.

LACTIC ACID

SYNONYMS Blood Lactate; Lactate

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Submit within 15 minutes after collection. Notify laboratory that the specimen is coming and give an approximate time of arrival. If unable to immediately transport, centrifuge and freeze plasma. **Cost:** \$ 22.40

SPECIMEN Type: Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Gray top (Sodium Fluoride and Sodium Oxalate) tube **Collection:** Routine venipuncture. Avoid hand clenching and use of a tourniquet. A tourniquet with patient clenching and unclenching his/her hand will lead to a build-up of high potassium and lactic acid from the hand muscles. **Storage:** Separate and keep at 2 - 8 Degrees C

until tested. **Patient Preparation:** N/A **Causes for Rejection:** Untimely delivery of specimen to laboratory, greater than 15 minutes after collection; improperly labeled specimen; grossly hemolyzed specimen.

INTERPRETATION Normal Range: Venous: 0.7 - 2.1 mmol/L; **Panic Value:** > 3.4 mmol/L
Comments: Gross hemolysis depresses lactic acid results. Causes of lactic acidosis (usually less than 3.4 mmol/L) include carbohydrate infusions, exercise, diabetic ketosis; causes of lactic acidosis (greater than 3.4 mmol/L) include shock, hypoxia and malignancies. Severe lactic acidosis can develop in minutes; lactic acidosis can accompany dehydration. **Use:** Aid in diagnosis of lactic acidosis when unexplained anion gap metabolic acidosis is encountered, especially if azotemia or ketoacidosis are not present.

LACTOSE TOLERANCE TEST

SYNONYMS Milk Sugar Tolerance Test

TEST INCLUDES Glucose, Fasting; Glucose 30 min. (LTT); Glucose 60 min. (LTT); Glucose 90 min. (LTT)

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Collected Monday through Friday This is a scheduled test. Patient must come to the laboratory, Monday through Friday, 0730 to 1600, to schedule this test. He/she must have their ID card and medical card to present to laboratory personnel when scheduling this test. Patient must report to the laboratory on the day of testing at 0730 and should be fasting for at least 10-12 hours. **Turnaround Time:** 4 to 8 hours **Special Instructions:** A Fasting blood glucose, 30 minute, 60 minute, and 90 minute.
Cost: \$ 20.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Grey top tube
Collection: After fasting, blood specimen is obtained, the patient is administered 50 grams of Lactose and 200 mLs of water (children receive 2 grams per kilograms of body weight not to exceed 50 grams).
Storage: Separate and refrigerate **Patient Preparation:** 10 – 12 hour fasting. Patient should not eat dark bread, peas, beans, sugars, high fiber foods within 24 hours of the test. Patient can not smoke during the test or 8 hours preceding test. No antibiotics should be taken 2 weeks prior to test unless specifically order.
Causes for Rejection: Time not marked on tubes; patient not appearing in the morning in the fasting state; a patient vomiting after ingestion of lactose and before the test is completed.

INTERPRETATION Normal Range: > 30 mg/dL over fasting level **Comments:** A rise of 20 – 30 mg/dL is inconclusive. “Flat Tolerance” findings, point to deficiencies of sugar-splitting enzymes **Use:** Establishes the presence of lactose intolerance. **Limitations:** Delayed gastric emptying may result in a flat curve.

LATEX, HEVEA BRAZILIENSIS (N) *shipped to outside facility for testing*

LDH

SYNONYMS Lactic Dehydrogenase; Lactic Acid Dehydrogenase; LD

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** : STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: Do not refrigerate or freeze specimen. **Cost:** \$7.00

SPECIMEN Type: Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate after processing **Patient Preparation:** N/A **Causes for Rejection:** Hemolysis; improperly labeled specimen.

INTERPRETATION Normal Range: 313 - 618 U/L **Comments:** Elevated levels are commonly seen in megaloblastic anemias, viral hepatitis, shock, hypoxia, hyperthermia, and extensive carcinomatosis,

myocardial and pulmonary infarcts; hemolysis also elevates LDH results. **Use:** Evaluate neoplastic states, diseases of the liver, renal infarct.

LDH ISOENZYMES PANEL (N) *shipped to outside facility for testing*

LEAD (B) *shipped to outside facility for testing*

LECITHIN/SPHINGOMYELIN (L/S) Ratio (N) *shipped to outside facility for testing*

LEGIONELLA ANTIBODY, IFA (N) *shipped to outside facility for testing*

LEGIONELLA ANTIGEN, URINE RIA (N) *shipped to outside facility for testing*

LEGIONELLA IGM/MULTIPLE SPECIES (N) *shipped to outside facility for testing*

LEGIONELLA PNEUMOPHILA DFA (N) *shipped to outside facility for testing*

LEPTOSPIRA ANTIBODY (N) *shipped to outside facility for testing*

LEUCINE AMINOPEPTIDASE (N) *shipped to outside facility for testing*

LEUKOCYTE ALKALINE PHOSPHATASE (N) *shipped to outside facility for testing*

LEUTEINIZING HORMONE

SYNONYMS LH; ICSH; Interstitial Cell Stimulating Hormone

ADMINISTRATION **Department:** Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** In females, date of last menstrual period should be given. Should be ordered as a FSH/LH battery. **Cost:** \$40.60

SPECIMEN **Type:** Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Transport to laboratory ASAP, **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION **Normal Range:** Female: Follicular: 2.58 – 12.1 mIU/mL; Luteal phase: 0.83 – 15.5 mIU/mL; Post Menopausal: 13.1 – 86.5 mIU/mL **Comments:** Should be performed as a battery with FSH (Follicle Stimulating Hormone). **Use:** Excessive LH and FSH are found in hypogonadism, anorchia, gonadal failure, complete testicular feminization syndrome and menopause. Useful in defining menstrual cycle phases in infertility evaluation in women. LH is low with pituitary failure.

LIDOCAINE (N) *shipped to outside facility for testing*

LIPASE

SYNONYMS Lipase, Serum; Serum Lipase

ADMINISTRATION **Department:** Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** : STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 15.40

SPECIMEN **Type:** Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Stable at room temperature for 1 to 2 days, 3 weeks at 4 degrees C **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: 23 - 300 U/L **Comments:** Increased in pancreatitis. Urine specimens are inappropriate for lipase. **Use:** Diagnosis of pancreatitis.

LIPID PANEL W/ HDL

SYNONYMS Coronary Heart Disease Risk Index; HDL; LDL; High Density Lipoprotein; Low Density Lipoprotein

TEST INCLUDES Cholesterol, Triglyceride, HDL, LDL, VLDL, and Cholesterol/HDL Ratio

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Monday - Friday **Turnaround Time:** Routine: 4 to 24 hour **Special Instructions:** Patient must fast for 12-14 hours before collection. **Cost:** \$ 39.20

SPECIMEN Type: Blood **Volume:** 15 mL **Minimum Volume:** 7 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** Ideally, patient should be on stable diet for 2 to 3 weeks prior to collection and should fast for at least 12 - 14 hours before collection of blood. **Causes for Rejection:** Non-fasting specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Cholesterol < 200 mg/dL; High Density Level: > 35 mg/dL; Triglyceride: < 200 mg/dL; Low Density Level: < 130 mg/dL; Very Low Density Level: 7 - 32 mg/dL; CHOL/HDL Ratio: Males 0-4.88 Females 0-4.23 **Comments:** This profile is performed Monday through Friday, excluding Holidays. **Use:** Evaluation of hyperlipidemia as an index to coronary artery disease; investigation of serum lipids is indicated in those with coronary and other arterial disease; as a determination of cardiac risk factor. When the triglyceride is greater than 400 mg/dL the calculated LDL is invalid and not reported.

LITHIUM

SYNONYMS Li+; Li, Blood; Eskalith

ADMINISTRATION Department: Chemistry **Request Form:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Collect the trough specimen at least 12 hours after last dose. **Cost:** \$ 14.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red, green, or lavender top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Hemolysis; improperly labeled specimen.

INTERPRETATION Normal Range: Therapeutic: 0.6 - 1.2 mmol/L; Toxic: >1.5 mg/L **Comments:** Natriuretic diuretics may reduce renal clearance of lithium. Ibuprofen may increase lithium concentrations. **Use:** Monitor therapeutic drug level; evaluate coma.

LUPUS ANTICOAGULANT PANEL (N) *shipped to outside facility for testing*

LUPUS PANEL (A) *shipped to outside facility for testing*

LYME ELISA (BAMC) *shipped to outside facility for testing*

LYSOZYME (N) *shipped to outside facility for testing*

MAGNESIUM, SERUM

SYNONYMS Mg, Serum

ADMINISTRATION Department: Chemistry **Request Method::** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** : STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Separate serum from cells immediately. Avoid hemolysis and venous stasis. **Cost:** \$14.00

SPECIMEN Type: Blood **Volume:** 5 mL **Minimum Volume:** 1 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum after processing **Patient Preparation:** N/A **Causes for Rejection:** Hemolysis; improperly labeled specimen.

INTERPRETATION Normal Range: 1.6 - 2.3 mg/dL; Panic ranges <1 mg/dL or > 4.9 mg/dL
In preclampsia: Therapeutic: 6.0 - 8.0 mg/dL; **Panic Range:** Greater than 10.0 mg/dL;
Toxic Range: > 15.0 mg/dL **Comments:** N/A **Use:** Magnesium deficiency produces neuromuscular disorders.

MAGNESIUM URINE 24 HOUR PANEL

SYNONYMS Mg, Urine

ADMINISTRATION Department: Chemistry **Request Method::** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 21.00

SPECIMEN Type: 24 hour urine **Volume:** All of 24 hour urine collected **Minimum Volume:** Same **Container:** Provided by laboratory **Collection:** Instruct patient to void at 0800 and discard urine. Then collect all urine, including the final specimen collected at the end of the 24 hours, i.e., 0800 the next morning. **Storage:** Refrigerate during and after collection **Patient Preparation:** N/A **Causes for Rejection:** Not all of the 24 hour urine submitted; improperly labeled container; and specimen not refrigerated.

INTERPRETATION Normal Range: 73 - 120 mg/day **Comments:** Magnesium excretion is directly dependent on dietary intake. Hypercalcemia, hypophosphatemia, and acidosis are among inhibitors of tubular reabsorption of magnesium. **Use:** Magnesium excretion controls magnesium balance. Urinary excretion of magnesium is enhanced by increasing blood alcohol levels, diuretics, cortico-steroids and cisplatin therapy, and aldosterone. Renal magnesium wasting occurs in renal transplant recipients who are on cyclosporine and prednisone.

MALARIAL SMEAR

SYNONYMS Blood Smear for Malarial Parasites; Malarial Parasites

ADMINISTRATION Department: Hematology **Request Method::** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** Routine: 4 to 24 hours **Special Instructions:** If the patient has traveled to a malaria endemic area, the date and area traveled should be specified on the requisition. **Cost:** \$ 12.60

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 0.5 mL in microtainer **Container:** Purple top tube (EDTA), purple top microtainer (EDTA) **Collection:** Routine venipuncture. Specimen should be drawn immediately before a fever spike is anticipated. **Storage:** Place on mixer until specimen is processed **Patient Preparation:** N/A **Causes for Rejection:** Clotted specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Negative **Comments:** Best results are obtained if smear is made from sample collected prior to or at the onset of fever and chills. If suspicious, collect specimens on patient every 12 hours for 3 days. **Use:** Diagnosis of malaria, parasitic infestation of blood; evaluation of a febrile disease of unknown origin.

MANUAL DIFFERENTIAL

SYNONYMS Diff. Count; Automated Differential; Differential Smear, Peripheral Blood; Differential WBC; Differential Leukocyte Count; White Blood Cell Morphology; Peripheral Smear.

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 4.5 mL Properly filled purple top tube (EDTA) **Minimum Volume:** 0.5 mL in properly collected purple top (EDTA) microtainer **Container:** Purple top (EDTA) tube; purple top microtainer **Collection:** Routine venipuncture **Storage:** Mix specimen until processed **Patient Preparation:** N/A **Causes for Rejection:** QNS specimen; clotted specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Varies (see report). Ranges are dependent on age and clinical information. **Comments:** An automated differential is routinely reported. Manual differentials are performed when specific laboratory criteria are met, or when requested by Pathologist. **Use:** Determination of qualitative and quantitative variations in white cell numbers and morphology; morphology of red cells; platelet evaluation; may be of use in evaluation of anemias, leukemias, infections, inflammatory states and inherited disorders.

MAPROTILINE (N) *shipped to outside facility for testing*

MARIJUANA METABOLITE QUANTITATIVE (N) *shipped to outside facility for testing*

MERCAPTOPURINE (N) *shipped to outside facility for testing*

MERCURY (N) *shipped to outside facility for testing*

METABOLIC SCREEN URINE (N) *shipped to outside facility for testing*

METANEPHRINES, 24 HOUR URINE (N) *shipped to outside facility for testing*

METHOTREXATE QUANTITATIVE (N) *shipped to outside facility for testing*

METHYLMALONIC ACID (N) *shipped to outside facility for testing*

MEXILETINE (N) *shipped to outside facility for testing*

MICRO URINALYSIS

SYNONYMS Micro UA; Microscopic Examination of Urine

ADMINISTRATION Department: Urinalysis **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine 4 – 24 hours **Special Instructions:** Indicate on slip if specimen is a "clean catch" or "catheterized" urine. **Cost:** \$ 7.00

SPECIMEN Type: Urine **Volume:** 15 mL **Minimum Volume:** 5 mL **Container:** Sterile urine collection cup or tube for specimens to be cultured; urine collection cup or tube for specimens that are not to be cultured. **Collection:** First morning, "clean catch" or "catheterized" urine is preferred. Random specimens are acceptable. **Storage:** Store refrigerated. If unable to bring to laboratory within 1/2 hour after collection, store refrigerated for no longer than 2 hours before bringing to laboratory. **Patient Preparation:** If clean catch midstream procedure is required, males should clean head of penis with soap and rinse. If not circumcised, pull the foreskin back and urinate into toilet. Catch midstream urine in

specimen cup. Females should clean labia from front to back with soap. Urinate into toilet and catch urine in midstream in the specimen cup. See Nursing procedure for "catheterized" urine. **Causes for Rejection:** Specimen older than 2 hours; sample volume quantity not sufficient; improperly labeled or unlabeled specimen.

INTERPRETATION Normal Range: WBC: 0-3/hpf; RBC: 0-3/hpf; Hyaline Casts: 0-2/lpf **Comments:** This test may be used to insure a urine microscopic exam is performed when the urinalysis is performed manually. When the urinalysis is performed on the Iris, the urine microscopic will be performed without a separate order for a micro urinalysis. **Use:** Screen for abnormalities of urine; diagnosis and management of renal diseases, urinary tract infection, urinary tract neoplasm, systemic diseases, and inflammatory or neoplastic diseases adjacent to the urinary tract.

MICROALBUMIN URINE 24 HOUR PANEL (N) *shipped to outside facility for testing*

MICROALBUMIN, RANDON URINE (N) *shipped to outside facility for testing*

MOTOR/SENS NEUROPATHY PANEL (N) *shipped to outside facility for testing*

MUMPS (B) *shipped to outside facility for testing*

MYCOPLASMA ANTIBODIES PANEL (N) *shipped to outside facility for testing*

MYELIN BASIC PROTEIN CSF(N) *shipped to outside facility for testing*

MYOGLOBIN (B)/(N) *shipped to outside facility for testing*

NEONATAL BILI PANEL

SYNONYMS Neo Bili; Neonatal Bili; Total Bili (Neonatal); Bilirubin (neonatal)

TEST INCLUDES Neonatal Bilirubin Calculated; Conjugated Bilirubin; Unconjugated Bilirubin

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Keep specimen protected from light. Bring to laboratory within 30 minutes after specimen is collected. **Cost:** \$ 8.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 1mL or Natelson Tube **Container:** Red or green top tube **Collection:** Routine venipuncture, fingerstick or heelstick, depending on age. **Storage:** Protect from light. Bring to laboratory within 30 minutes after collection. **Patient Preparation:** When collecting fingerstick or heelstick, collect specimen in such a manner to obtain an even, constant flow of blood. Forceful excessive squeezing causes hemolysis which can cause erroneous values. **Causes for Rejection:** Hemolysis; improperly labeled specimen; untimely delivery to laboratory, greater than 30 minutes after collection.

INTERPRETATION Normal Range: Conjugate Bilirubin: Neonates <0.6 mg/dL; Unconjugated Bilirubin: Neonates 0.6 – 10.5 mg/dL. Normal range for prenatal direct bilirubin is dependent on several clinical factors. It is generally greater than adult normal values. **Comments:** N/A **Use:** Evaluation of liver and biliary disease. Increased direct bilirubin occurs with biliary disease, including both intrahepatic and extrahepatic lesion. Hepatocellular causes of elevation include hepatitis, cirrhosis and advanced neoplastic states. In newborns, increased direct bilirubin may be caused by Hemolytic Disease of the Newborn (HDN).

NEURONTIN (N) *shipped to outside facility for testing*

NITRAZINE TEST

SYNONYMS N/A

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours or Routine: 4 – 24 hours **Special Instructions:** N/A. **Cost:** \$22.40

SPECIMEN Type: Two swabs saturated with vaginal fluid placed in stoppered test tube. **Collection:** By ward personnel. **Storage:** Send to laboratory immediately. Specimen must be received in laboratory before swabs dry out. **Patient Preparation:** N/A **Causes for Rejection:** Swabs are dry.

INTERPRETATION Normal Range: Negative. **Use:** To help diagnose premature rupture of membranes in pregnancy.

NORPACE (N) *shipped to outside facility for testing*

NORVERAPAMIL (N) *shipped to outside facility for testing*

OCCULT BLOOD, STOOL

SYNONYMS Hemoccult; Stool Guaiac; Stool, Occult Blood

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 4 to 24 hours **Special Instructions:** Tests for stool occult blood cannot be applied for detection of blood in gastric juice because of the pH difference and possible drug ingestion. **Cost:** \$5.60

SPECIMEN Type: Stool **Volume:** A small fecal sample **Minimum Volume:** Enough to apply to the Hemoccult Sensa Slide **Container:** Closed container for stool **Collection:** Collect the feces for card areas A and B from different areas of the stool with the applicator stick provided. Then apply to the occult card. Close cover to protect from heat and light. If occult Gastro-intestinal bleeding is suspected, at least three samples of separate bowel movements should be submitted. After stool is applied to card return or send card to the laboratory. **Storage:** Cards should be returned to the laboratory immediately after collecting the last slide. Laboratory delivery should not be over three days at room temperature after collection and application to the card. **Patient Preparation:** Because of the sensitivity of this test, patient must follow a special diet starting at least 48 hours before and continuing throughout the test period. The diet can increase the accuracy of the test results and provide roughage to help uncover "silent" lesions which sometimes bleed intermittently. Foods to eat: Well cooked poultry and fish, high fiber food such as wheat bread, bran cereal, popcorn. Any cooked fruits and vegetables with restriction of peroxidase-rich vegetables. Turnips, horseradish, artichokes, mushrooms, radishes, broccoli, bean sprouts, cauliflower, moderate apples, moderate oranges, moderate bananas, cantaloupes and grapes are recommended, 72 hours prior to the testing and during testing. This allows for a decrease in false positive reactions. If patient cannot follow this selection, only a moderate amount of these raw fruits and vegetables are allowed. Foods, Drugs, and Vitamins to avoid: A.) Red meat (beef, lamb) including processed meats and liver. B.) Vitamin C in excess of 250mg per day. C.) Aspirin or aspirin containing products (Salicylates). D.) Alcoholic beverages in excess. E.) Anti-inflammatory drugs. F.) Iron supplements. G.) Cancer chemotherapeutic drugs can also cause false positive results. **Causes for Rejection:** Patient not following special diet as explained above; stool retrieved from toilet bowl; some sanitizers generate chlorine and cause a false positive reaction. Stool contaminated with bloody urine also causes a false positive reaction.

INTERPRETATION Normal Range: Occult Blood Ng, Guaiac, Negative **Comments:** This method for Guaiac testing for stool occult blood utilizes peroxidation of a chromogen by stool peroxidases. Hemoglobin acts as a peroxidase, but stool may contain meat, bacteria, and plant peroxidases. Normal

intestinal blood loss averages 2 to 2.5 mL. The Hemocult begins to turn positive at about 5 mg hemoglobin per gram of stool. This is considered to be the upper limit of normal stool peroxidase activity.
Use: Detection of occult blood.

ORGANIC ACIDS PLASMA (N) *shipped to outside facility for testing*

ORGANIC ACIDS, URINE QUANTITATIVE (N) *shipped to outside facility for testing*

OSMOLALITY (SERUM)

SYNONYMS Serum Osmolality; Osmol, Serum

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 1 - 24 hours
Special Instructions: N/A **Cost:** \$ 10.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A
Causes for Rejection: Hemolysis; improper labeling of specimen.

INTERPRETATION Normal Range: Serum: 278 - 305 mOsm/kg; Panic values; < 265 mOsm/kg and/or > 320 mOsm/kg. Osmolal GAP: < 10; Toxic: > 10 **Comments:** Osmolal GAP is serum osmolality minus "calculated" osmolality. A "calculated " serum osmolality can be performed in the Chemistry section of the laboratory by submitting a 7 mL red top tube and requesting a "calculated osmolality" on a CHCS order or Miscellaneous SF 557 **Use:** Evaluation of electrolyte and water balance. Use of the freezing point and calculated osmolality will give the Delta osmolality. Osmole GAP is utilized to assess alcohol ingestion toxicity.

OSMOLALITY (URINE)

SYNONYMS Urine Osmo

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 2 - 24 hours **Special Instructions:** N/A **Cost:** \$11.00

SPECIMEN Type: Random urine **Volume:** 10 mL urine **Minimum Volume:** 5 mL **Container:** Urine container **Collection:** Clean catch urine **Storage:** Refrigerate **Patient Preparation:** N/A **Causes for Rejection:** Improper labeling of specimen; quantity not sufficient.

INTERPRETATION Normal Range: 50 - 1200 mOsm/kg **Comments:** N/A **Use:** Evaluation of concentrating abilities of kidneys.

OVA AND PARASITE CONC. (S) *shipped to outside facility for testing*

OXALATE, 24 HOUR URINE PANEL (N) *shipped to outside facility for testing*

PARATHYROID HORMONE INT (B) *shipped to outside facility for testing*

PARTIAL THROMBOPLASTIN TIME

SYNONYMS Activated Partial Thromboplastin Time; APTT; PTT

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours
Special Instructions: Transport immediately to the laboratory. **Cost:** \$ 9.00

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 2.7 mL in a micro tube **Container:** Blue top tube (Sodium Citrate); micro blue top tube (Sodium Citrate) **Collection:** If multiple tests are being drawn, collect coagulation studies last. If only a PTT is being drawn, collect 1 to 2 mL into another vacutainer, discard and then collect the PTT. **Storage:** Sample must be sent to laboratory and test completed within two hours. Allow sample to remain at room temperature until tested. **Patient Preparation:** Collect specimen 1 hour before next dose of heparin if heparin is being given by intermittent injection; not applicable to patients on continuous heparin infusion therapy. Apply pressure to puncture site for at least 10 minutes if patient is on heparin therapy. **Causes for Rejection:** Improperly filled container; untimely delivery of specimen to laboratory, greater than 2 hours after collection; specimen clotted; improperly labeled specimen; grossly hemolyzed specimen.

INTERPRETATION Normal Range: 20.4 - 33.7 seconds **Panic Value:** Greater than 100 seconds
Comments: Normal range is reported with patient time. **Use:** Evaluation of the intrinsic coagulation system; useful in monitoring heparin therapy; aids in screening for presence of classical hemophilia A and B, congenital deficiencies of factors II, V, VIII, IX, XI and XII, dysfibrinogenemia, Disseminated Intravascular Coagulation, liver failure and vitamin K deficiency.

PARVOVIRUS B-19 ANTIBODY (IgG) (N) shipped to outside facility for testing

PARVOVIRUS B-19 ANTIBODY (IgM) (N) shipped to outside facility for testing

pH TESTING

SYNONYMS Hydrogen Ion Concentration

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 8.00

SPECIMEN Type: Gastric Contents, Amniotic Fluid, and Body Fluid **Volume:** 3 mL **Minimum Volume:** 1mL **Container:** Sterile container **Collection:** Obtain from appropriate site **Storage:** 2 – 4 degree centigrade if not measured immediately. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; untimely delivery to laboratory, greater than 30 minutes after collection.

INTERPRETATION Normal Range: Gastric Contents pH: 1.5 – 3.5, Amniotic Fluid pH: 7.1 – 7.4; No established body fluid pH ranges. **Comments:** pH below 3 indicates presence of free Hydrochloric Acid in gastric contents **Use:** Amniotic fluid pH used to determine ruptured membranes

PHENOBARBITAL

SYNONYMS Luminal; Phenobarb; Phenobarbital Level, Blood

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 to 24 hours
Special Instructions: Level may increase when Phenytoin is given. Draw Peak: 6 to 18 hours after oral dose unless physician specifies otherwise. Draw Trough: Just prior to dose. **Cost:** \$ 28.30

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 1 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A
Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: Therapeutic range: 15 - 40 ug/mL; Panic Value: > 60 ug/mL
Comments: N/A **Use:** Monitor therapeutic drug level of phenobarbital.

PHENOPHTHALEIN, URINE QUALITATIVE (N) shipped to outside facility for testing

PHENOTYPE

SYNONYMS Antigen screen; Antigen type

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557; SF556
Availability: Daily **Turnaround Time:** ASAP 2 hours; Routine 4-24 hours **Special Instructions:** N/A
Cost: \$ 19.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection, and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** N/A. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A. **Comments:** N/A. **Use:** To determine if a donor unit lacks the antigen directed against the antibody in patents sera.

PHENYLALANINE (N) shipped to outside facility for testing

PHENYTOIN

SYNONYMS Dilantin

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: Sampling time: A) Peak: (IV) 2 to 4 hours after loading dose; (Oral) 3 to 9 hours after loading dose B) Trough: Immediately prior to next dose. **Cost:** \$ 28.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate serum and run immediately **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Therapeutic: 10 - 20 ug/mL Panic value: greater than 40 ug/mL
Comments: N/A **Use:** Monitor therapeutic dilantin level; assess toxicity.

PHOSPHOROUS 24 HR URINE PANEL

SYNONYMS PO4, Urine; Phos, Urine; Urine Phos

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour collection is required. **Cost:** \$ 18.20

SPECIMEN Type: 24 hour urine **Volume:** All of 24 hour specimen. **Minimum Volume:** Same **Container:** A 24 hour collection container provided by the laboratory. **Collection:** Instruct patient to void at 0800 and discard the urine. Then collect all urine including the final specimen voided at 0800 the next morning. **Storage:** Refrigerate during and after collection. **Patient Preparation:** N/A **Causes for Rejection:** Improperly collected specimen; improperly submitted requisition; unrefrigerated specimen; not all of the 24 hour specimen submitted.

INTERPRETATION Normal Range: 0.4 - 1.3 gm/day **Comments:** There is a significant diurnal variation in the excretion of phosphorus in urine, with values in the afternoon being the highest. Output

varies widely, depending on diet. All tests involving urinary calcium and phosphorus excretion require a creatinine clearance of > 40 - 50 mL/min for valid interpretation. Children with Thalassemia may have normal phosphorous absorption, but high renal phosphaturia leading to a deficiency of phosphorous. **Use:** Evaluate calcium/phosphorous balance.

PHOSPHOROUS (RANDOM URINE)

SYNONYMS Random Urine Phosphorous

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:**
A Random urine collection is required. **Cost:** \$ 11.20

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** A sterile urine collection cup **Collection:** Collect a random urine specimen **Storage:** Refrigerate after collection.
Patient Preparation: N/A **Causes for Rejection:** Improperly collected specimen; improperly submitted requisition; unrefrigerated specimen

INTERPRETATION Normal Range: No established normal range **Comments:** There is a significant diurnal variation in the excretion of phosphorus in urine, with values in the afternoon being the highest. Output varies widely, depending on diet. All tests involving urinary calcium and phosphorus excretion require a creatinine clearance of > 40 - 50 mL/min for valid interpretation. Children with Thalassemia may have normal phosphorous absorption, but high renal phosphaturia leading to a deficiency of phosphorous. **Use:** Evaluate calcium/phosphorous balance.

PHOSPHOROUS, SERUM

SYNONYMS Phos, Serum; PO₄, Serum; Inorganic Phosphate; Serum Phosphorous

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Ideally, patient should be fasting. Phosphate levels are decreased following meals. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate serum promptly from cells to avoid falsely elevated results **Patient Preparation:** Avoid venous stasis **Causes for Rejection:** Hemolyzed specimen; lipemic specimen; improperly labeled specimen.

INTERPRETATION Normal Range: 2.5 - 4.5 mg/dL **Panic range:** < 1.2 mg/dL or >8.9 mg/dL
Comments: Antacids, diuretics and long-term steroids are among common agents bearing a relationship to severe hypophosphatemia. **Use:** High phosphate values can be caused by youth, exercise, dehydration, hypovolemia, acromegaly, hypoparathyroidism, liver disease, cardiac resuscitation, pulmonary embolism and renal failure; low phosphate values can be caused by malnourished subjects.

PHYTANIC ACID (N) *shipped to outside facility for testing*

PINWORM PREPARATION (N) *shipped to outside facility for testing*

PKU NEWBORN RESCREEN (S) *shipped to outside facility for testing*

PLASMA CATECHOLAMINES, HPLC (N) *shipped to outside facility for testing*

PLASMA CHOLINESTERASE (N) *shipped to outside facility for testing*

PLASMA RENIN ACTIVITY (N) *shipped to outside facility for testing*

PLASMINOGEN, FUNCTIONAL (N) *shipped to outside facility for testing*

PLATELET, MANUAL

SYNONYMS Thrombocyte Count

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 2 to 4 hours **Special Instructions:** N/A **Cost:** \$ 9.80

SPECIMEN Type: Blood **Volume:** 4.5 mL in purple top tube (EDTA) **Minimum Volume:** 0.5 mL blood in purple top microtainer (EDTA) **Container:** Purple top tube (EDTA) or purple-top (EDTA) microtainer **Collection:** Routine venipuncture, heelstick or fingerstick **Storage:** Room temperature, mix specimen until test is performed **Patient Preparation:** N/A **Causes for Rejection:** Clotted specimen; improperly labeled specimen; incorrect specimen container.

INTERPRETATION Normal Range: 150,000 - 450,000/cumm **Panic Value:** < 50,000 or > 1,000,000/cumm **Comments:** All platelet counts reported as less than 100,000/cumm are confirmed by performing a platelet estimate on a slide **Limitations:** Clumping may cause a falsely low platelet count. Platelet satellitism of neutrophils will cause a pseudothrombocytopenia. RBC or WBC fragments, including fragmented fragile leukemia cells and neutrophil pseudo-platelets, may cause falsely elevated counts. However, these conditions are noted on the report and new specimens are requested if necessary. **Use:** Evaluation, diagnosis and follow-up of bleeding disorders, petechiae, thrombocytopenia, ITP, Disseminated Intravascular Coagulation, leukemia and chemotherapy management.

PNEUMOCOCCAL IGG PANEL (N) *shipped to outside facility for testing*

PNEUMOCOCCAL IgG (N) *shipped to outside facility for testing*

PORPHOBILINOGEN URINE QUALITATIVE (N) *shipped to outside facility for testing*

PORPHOBILINOGEN URINE QUANTITATIVE (N) *shipped to outside facility for testing*

PORPHYRINS FECES FRACTION PANEL (N) *shipped to outside facility for testing*

PORPHYRINS PLASMA FRACTION PANEL (N) *shipped to outside facility for testing*

PORPHYRINS URINE 24 HOUR PANEL (N) *shipped to outside facility for testing*

PORPHYRINS URINE RANDOM PANEL (N) *shipped to outside facility for testing*

POST-LOAD CALCIUM SPOT URINE

SYNONYMS N/A

TEST INCLUDES Random Urine Calcium, Random Urine Creatinine, Calcium/Creatinine Urine Ratio

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A Random urine collection is required. **Cost:** \$ 9.00

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** A sterile urine collection cup **Collection:** Collect a random urine specimen **Storage:** Refrigerate after collection. **Patient Preparation:** Patient must take prescribed calcium load per Urologist 2 hours prior to test. **Causes for Rejection:** Improperly labeled or collected specimen; improperly submitted requisition; unrefrigerated specimen

INTERPRETATION Normal Range: Ca/Creat Ratio 0.20 **Comments:** Pre < .11 and Post > .20 is indicative of absorptive renal hypercalciuria; Pre > .11 and Post > .20 is indicative of renal hypercalciuria leak; Pre > .11 and Post < .20 is indicative of no renal leaks; Pre < .11 and Post < .20 is indicative of no re-absorptive problem. PTH is used for clarification of hypercalciuria if this test is negative. Specimen container must be marked Post- Calcium load or it will be rejected. **Use:** To explain hypercalciuria

POTASSIUM

SYNONYMS K, K+

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Avoid use of tourniquet. Avoid hand-clenching. These increase likelihood of blood stasis, resulting in hemolysis. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture using vacutainer or syringe needle. If a syringe is used, do not force blood into the vacutainer tube. Forcing blood into tube increases likelihood of blood stasis. **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Hemolyzed specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Serum: 3.6 - 5.0 mmol/L; Plasma is 0.1-0.7 lower than serum range: Panic Range: <2.8 mmol/L or > 6.2 mmol/L or > 8.0 for Hemolyzed Specimen **Comments:** Potassium levels should be followed especially in elderly patients. Also potassium levels should be monitored for those patients on intravenous hyperalimentation, in patients on diuretic therapy, in cases of renal disease, and in hypertensive patients. **Use:** Evaluation of electrolyte balance.

POTASSIUM 24 HR URINE PANEL

SYNONYMS K, Urine; Potassium, Urine; Urine Potassium

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour collection is required. **Cost:** \$ 18.20

SPECIMEN Type: 24 hour urine **Volume:** All of 24 hour specimen. **Minimum Volume:** Same **Container:** A 24 hour collection container provided by the laboratory. **Collection:** Instruct patient to void at 0800 and discard the urine. Then collect all urine including the final specimen voided at 0800 the next morning. **Storage:** Refrigerate during and after collection. **Patient Preparation:** N/A **Causes for Rejection:** Improperly collected specimen; improperly submitted requisition; unrefrigerated specimen; not all of the 24 hour specimen submitted.

INTERPRETATION Normal Range: 25 - 125 mmol/day. Average is 40 mmol/day (diet dependant) **Comments:** N/A **Use:** To study renal and adrenal disorders and water and acid-base imbalances.

POTASSIUM (RANDOM URINE)

SYNONYMS Random Potassium Urine

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A Random urine collection is required. **Cost:** \$ 11.20

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** A sterile urine collection cup **Collection:** Collect a random urine specimen **Storage:** Refrigerate after collection.

Patient Preparation: N/A **Causes for Rejection:** Improperly collected specimen; improperly submitted requisition; unrefrigerated specimen

INTERPRETATION Normal Range: No established normal range. **Comments:** N/A **Use** To study renal and adrenal disorders and water and acid-base imbalances.

PREALBUMIN (B) *shipped to outside facility for testing*

PRE-LOAD CALCIUM SPOT URINE

SYNONYMS N/A

TEST INCLUDES Random Urine Calcium, Random Urine Creatinine, Calcium/Creatinine Urine Ratio

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A Random urine collection is required. **Cost:** \$ 9.00

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** A sterile urine collection cup **Collection:** Collect a random urine specimen **Storage:** Refrigerate after collection.
Patient Preparation: Patient should pass morning void prior to coming to lab to collect specimen. Patient must take prescribed calcium load per Urologist after this test is collected, and return to the lab in 2 hours to collect Post Calcium spot urine. **Causes for Rejection:** Improperly labeled or collected specimen; improperly submitted requisition; unrefrigerated specimen

INTERPRETATION Normal Range: Ca/Creat Ratio 0.11 **Comments:** Pre < .11 and Post > .20 is indicative of absorptive renal hypercalciuria; Pre > .11 and Post > .20 is indicative of renal hypercalciuria leak; Pre > .11 and Post < .20 is indicative of no renal leaks; Pre < .11 and Post < .20 is indicative of no re-absorptive problem. PTH is used for clarification of hypercalciuria if this test is negative. Specimen container must be marked Pre- Calcium load or it will be rejected. **Use:** To explain hypercalciuria

PRIMIDONE (Q) *shipped to outside facility for testing*

PRENATAL ANTIBODY PANEL

SYNONYMS AB Prenatal Screen; Prenatal.

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 557/ SF 556
Availability: Daily **Turnaround Time:** ASAP within 2 hours; Routine 4-24 hours **Special Instructions:** N/A **Cost:** \$ 19.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks **Patient Preparation:** N/A. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A. **Comments:** If antibody screen comes up positive an antibody identification is automatically ordered. If a clinically significant antibody is found then a titration is done. **Use:** To determine ABO/Rh and antibody detection in a female prenatal patient..

PROCAINAMIDE/NAPA PANEL *Shipped to outside facility for testing*

PROCONVERTIN PT ASSAY (C) *shipped to outside facility for testing*

PROGESTERONE (B) *shipped to outside facility for testing*

PROLACTIN

SYNONYMS Luteotrophin

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 42.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture. Draw between 0800 and 1000. Deliver to Laboratory within 30 minutes of collection. **Storage:** Separate and freeze serum. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; untimely delivery of specimen to the laboratory, greater than 30 minutes.

INTERPRETATION Normal Range: Female (Non-Pregnant): 3.0 18.6 ng/mL; Male: 3.6 – 17.8 ng/mL
Comments: Normal prolactin levels do not rule out pituitary tumor. Prolactin secretion is episodic and is influenced by stress and by glucose levels. Levels rise during pregnancy and are elevated during lactation, in post partum subjects and following bilateral oophorectomy. Destructive pituitary disease cause low levels. **Use:** Prolactin level, for hyperprolactinemia, is the first test for work-up of galactorrhea (inappropriate lactation). A premenopausal female having amenorrhea and galactorrhea is suspect of pituitary prolactinoma. A pituitary function test, prolactin level is useful in the detection of prolactin-secreting pituitary tumors (microadenomas, macroadenomas) (Forbes-Albright syndrome) with or without galactorrhea, with or without evidence of sellar enlargement. Postpartum hyperprolactinemia is the Chiari-Frommel syndrome. Prolactin testing is also used to work up infertility, secondary amenorrhea, uncommonly primary amenorrhea, oligomenorrhea and in maus, impotence, gynecomastia and hypogonadism.

PROPAFENONE (N) *shipped to outside facility for testing*

PROSTATIC ACID PHOSPHATASE (B) *shipped to outside facility for testing*

PROSTATIC SPECIFIC ANTIGEN

SYNONYMS PSA

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Monday, Wednesday, Friday **Turnaround Time:** 2 – 3 days **Special Instructions:** Fasting specimens preferred. If inpatient, collect and bring specimen immediately to the laboratory within 30 minutes after collection. PSA is performed as a batch test on Monday, Wednesday, and Friday, except Holidays. If test results are expected on the same day as collection, specimens must be collected by 0830 and all PSA specimens must arrive in Special Chemistry no later than 0930 on Monday, Wednesday, or Friday. Otherwise, the specimen will be processed on the next batch day. **Cost:** \$39.20
SPECIMEN Type: Blood **Volume:** 10 mL **Minimum Volume:** 5 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and Freeze serum in a plastic vial. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; rectal exam within 48 hours prior to collection.

INTERPRETATION Normal Range: Ages 40 –49: < 2.5 mg/mL; Ages 50 – 59: < 3.4 mg/mL; Ages 60 – 69: < 4.4 mg/mL; Ages 70 – 79: < 6.4 mg/mL **Comments:** Abnormal values greater than normal range but less than 10 mg/mL will be sent out for free PSA analysis. Free PSA values greater than 20% are indicative of Benign Prostatic Hypertrophy (BPH). Rectal examination within 48 hours of specimen

collection may cause elevation of results. Individual patients should be followed by the same methodology.
Use: Detection of PSA in blood of patients with malignant and benign disease and as an adjunctive test in the management of prostate cancer patients.

PROTEIN C ANTIGENIC (N) *shipped to outside facility for testing*

PROTEIN C, FUNCTIONAL (N/WHMC) *shipped to outside facility for testing*

PROTEIN S, ANTIGENIC (N) *shipped to outside facility for testing*

PROTEIN S, FUNCTIONAL (N/WHMC) *shipped to outside facility for testing*

PROTEIN, TOTAL

SYNONYMS T.P.; Total Protein, Serum; Serum TP; Protein, Serum

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Hemolyzed specimen; markedly lipemic specimen; improperly labeled specimen.

INTERPRETATION Normal Range: 6.3 - 8.2 g/dL **Comments:** Use of plasma expanders, for example, fresh frozen plasma, are reported to decrease results. Value can be decreased by 5 - 10% upon recumbancy as in hospitalization. **Use:** Evaluate nutritional states; investigation of edema.

PYRUVATE ACID (N) *shipped to outside facility for testing*

PYRUVATE KINASE (N) *shipped to outside facility for testing*

PROTHROMBIN TIME

SYNONYMS PT; Protime

TEST INCLUDES Prothrombin Time; INR

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 -24 hrs **Special Instructions:** Specimen must be brought to the laboratory within 1 hour after collection. **Cost:** \$8.40.

SPECIMEN Type: Blood **Volume:** 4.5 mL **Minimum Volume:** 2.7 mL **Container:** Blue top tube (Sodium Citrate); micro blue top tube (Sodium Citrate) **Collection:** Routine venipuncture. If multiple tests are being collected, draw coagulation studies last. If only a Prothrombin is being collected, fill a red top vacutainer tube with 2 CC'S of blood first and then fill the blue top tube. This avoids contamination of the specimen with tissue thromboplastin. **Storage:** Testing must be performed within 2 hours. **Patient Preparation:** N/A **Causes for Rejection:** Improperly filled tube; clotted specimen; improperly labeled specimen; untimely delivery of specimen to laboratory, greater than 1 hour after collection, grossly hemolyzed specimen.

INTERPRETATION Normal Range: (PT) 10.8 - 12.4 seconds; Panic Range: INR > 5.0 **Comments:** International Normalized Ratio (INR) is reported with the Prothrombin time. **Use:** Evaluation of coagulation system; aids in screening for congenital deficiencies of factors II, V, VII, and X, liver failure and DIC; monitor long-term coumadin therapy.

QUINIDINE

SYNONYMS Quinidex; Quinora; Cardioguin

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous Form 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 to 24 hours **Special Instructions:** Collect specimen just before next dose. **Cost:** \$ 25.20

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: 2 - 5 ug/mL; Panic value >10 ug/mL **Comments:** Serum digoxin concentrations should be measured before quinidine therapy and again in 4 to 5 days. Measure trough because of variability of peak interval. The new steady state of digoxin concentration occurs in 7 to 14 days with signs of toxicity beginning to appear in 3 to 7 days after initiation of quinidine therapy. **Use:** To prevent both arterial and ventricular arrhythmias; therapeutic monitoring; to provide documentation for adequate dosage as well as toxicity assessment.

QUININE (N) *shipped to outside facility for testing*

RABIES (B) *shipped to outside facility for testing*

RAPID PLASMA REAGIN (RPR)

SYNONYMS RPR; Syphilis Screening Test; Replaces VDRL; Replaces Kline Test

ADMINISTRATION Department: Serology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 1 to 3 days **Special Instructions:** N/A **Cost:** \$9.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 5 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen

INTERPRETATION Normal Range: Non-reactive **Comments:** The RPR is more sensitive than the VDRL. Because of the many causes of false positive tests, any reactive serum is automatically sent to the State Health Department to be tested by a confirmation method. **Use:** Screening test for Syphilis.

RBC CHOLINESTERASE CDTF CHPPUM

SYNONYMS Acetylcholinesterase, RBC; Cholinesterase, Erythrocyte Cell; True Cholinesterase; Cholinesterase, RBC

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Batch **Turnaround Time:** Within 5 days of draw **Special Instructions:** N/A **Cost:** \$ 16.80

SPECIMEN Type: Blood **Volume:** 5 mL **Minimum Volume:** 3 mL **Container:** Purple top tube (EDTA) **Collection:** Routine venipuncture **Storage:** Refrigerate **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; specimen clotted.

INTERPRETATION Normal Range: 0.63 - 0.89 delta pH/hour **Comments:** Persons with an atypical form of the enzyme, (with low enzyme activity), exhibit prolonged apnea following the use of certain

suxamethonium-type muscle relaxants in anesthesia. **Use:** Cholinesterase is measured to diagnose pesticide toxicity, nerve agent (gas) exposure and to detect atypical forms of the enzyme.

RESPIRATORY SYNCYTIAL VIRUS, ANTIGEN

SYNONYMS RSV antigen, RSV Ag, Resp Syncytial Virus Ag

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 553 if computer down **Availability:** Daily **Turnaround Time:** STAT (within 1 hour), ASAP (within 2 hours) **Special Instructions:** ONLY FOR ADMITTING PATIENTS TO THE FLOOR; for the purpose of isolating infected individuals **Cost:** \$38.40

SPECIMEN Type: Nasopharyngeal washes, aspirates, or swabs, tracheal aspirates, fresh. **Volume:** Washes: 3 to 4 mls; aspirate: 0.5mls; swabs: optimal yield **Minimum Volume:** Same as for Volume **Container:** Add to 3 to 4 mls wash to sterile tube or container, 0.5 mls aspirate to glass tube containing phosphate buffer, >0.5 mls aspirate add to glass tube containing phosphate buffer, Dacron(trademark) polyester or rayon-tipped swabs (Not calcium alginate) **Collection:** Transport to laboratory as soon as possible. Nasopharyngeal washes, aspirates, and swabs need to be obtained by specially trained physicians or nursing personnel. **Storage:** This test is indicated for rapid use; therefore storage is not indicated **Patient Preparation:** See Collection **Causes for Rejection:** Improperly labeled or collected specimen. Excessive bloody specimens.

INTERPRETATION Normal Range: Negative (no antigen detected) **Comments:** Visible blood have been found to yield non-interpretable results. Detects both viable and nonviable RSV particles. Fresh specimen preferable. Negative test results does not eliminate the possibility of RSV infection. Used in concert with all other clinical information. **Use:** To detect the presence of RSV antigen from nasopharyngeal specimens. Ordered for purposes of admitting person to an isolation room.

RESPIRATORY SYNCYTIAL VIRUS ANTIBODY (N) *shipped to outside facility for testing*

RETICULOCYTE COUNT

SYNONYMS Retic Count

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP 2 hours, Routine 4-8 hours. **Special Instructions:** Specimen should be delivered to laboratory within 2 hours. **Cost:** \$9.80.

SPECIMEN Type: Blood **Volume:** Purple top tube (EDTA) **Minimum Volume:** Purple top microtainer (EDTA) **Container:** Purple top tube (EDTA); Purple top microtainer (EDTA) **Collection:** Routine venipuncture or fingerstick, invert specimen several times after collection **Storage:** Room temperature, mix specimen before processing **Patient Preparation:** N/A **Causes for Rejection:** Clotted specimen; specimen > 6 hours old; improperly labeled specimen.

INTERPRETATION Normal Range: Adult Male: 0.8 - 2.5%; Adult Female: 0.8 - 4.1%; Children: 2 - 4%; Newborns (less than 24 hours old): less than 7%. **Comments:** Demonstration of an increase in the number of circulating reticulocytes provides reliable evidence of increased red cell production. **Use:** Evaluation of erythropoietic activity.

RHEUMATOID FACTOR, QUAL (RF)

SYNONYMS RA; RF; Rheumatoid Arthritis Test, Qualitative

ADMINISTRATION Department: Serology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 1 to 3 days **Special Instructions:** N/A **Cost:** \$12.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Serum may be stored refrigerated (2-8°C) for 5 days. For extended storage, freeze at -20° C. **Patient Preparation:** N/A **Causes for Rejection:** Blood submitted in incorrect container; improperly labeled specimen, hemolyzed or markedly lipemic serum.

INTERPRETATION Normal Range: Negative **Comments:** Many rheumatic conditions and other chronic inflammatory processes also may produce rheumatoid factors. Thus, the presence of rheumatoid factor, especially in low titer, is not diagnostic for rheumatoid arthritis. **Use:** Aids in the differential diagnosis and prognosis of arthritis. **Limitations:** 1.) The clinical significance of any test result depends upon its relationship to other patient data. Disease diagnosis and management should be based on the evaluation of all relevant patient information. RF is present in the sera of most patients with RA. Although a positive RF test result is highly suggestive of RA, it is not diagnostic for this condition since RF also appears in a small percentage of healthy individuals and in some patients with other disorders. In addition, a negative result does not exclude a diagnosis of RA since approximately 25% of patients with RA do not demonstrate elevated RF levels. 2.) RF can consist of immunoglobulins from the IgA, IgG, and IgM classes. IgM reacts more readily in assays using IgG on the solid phase. It is presumed that this assay detects IgM over IgA and IgG classes. 3.) Color Slide RF has been tested for the detection of RF in serum. Performance with plasma or synovial fluid has not been established. 4.) Although no significant prozone effect has been observed with high titer sera, a decrease in the degree of agglutination may be seen with such samples.

RHEUMATOID FACTOR, QUAN (RF)

SYNONYMS RF, Quantitative; Quantitative RF; Quantitative Rheumatoid Factor

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 1-3 days **Special Instructions:** N/A
Cost: \$12.60

SPECIMEN Type: Blood **Volume:** 15 mL **Minimum Volume:** 7 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Serum may be stored refrigerated (2-8°C) for 5 days. For extended storage, freeze at -20° C. **Patient Preparation:** N/A **Causes for Rejection:** Hemolyzed specimen, improperly labeled specimen, or markedly lipemic serum.

INTERPRETATION Normal Range: < 1:20 **Comments:** Rheumatoid factors are antibodies directed against the FC fragment of IgG. These are usually IgM antibodies, but may be IgG or IgA. Statistically, patients with Rheumatoid Arthritis who have high titers of rheumatoid factor are more likely to have severe disease and systemic involvement than other patients. High titers correlate with presence of rheumatoid nodules and low synovial fluid complement. **Use:** Used in the differential diagnosis and prognosis of arthritis. **Limitations:** 1.) The clinical significance of any test result depends upon its relationship to other patient data. Disease diagnosis and management should be based on the evaluation of all relevant patient information. RF is present in the sera of most patients with RA. Although a positive RF test result is highly suggestive of RA, it is not diagnostic for this condition since RF also appears in a small percentage of healthy individuals and in some patients with other disorders. In addition, a negative result does not exclude a diagnosis of RA since approximately 25% of patients with RA do not demonstrate elevated RF levels. 2.) RF can consist of immunoglobulins from the IgA, IgG, and IgM classes. IgM reacts more readily in assays using IgG on the solid phase. It is presumed that this assay detects IgM over IgA and IgG classes. 3.) Color Slide RF has been tested for the detection of RF in serum. Performance with plasma or synovial fluid has not been established. 4.) Although no significant prozone effect has been observed with high titer sera, a decrease in the degree of agglutination may be seen with such samples.

RHIG-antenatal (28 weeks)

SYNONYMS 28 WEEK rhig; 28 WEEK Rhogham; RHIG-antenatal; Rhogham-antenatal. **Test Includes:** ABO/RH; Antibody Screen.

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 518 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4-24 hours **Special Instructions:** Submit 1 SF 518 for each unit requested. On SF 518 annotate: 1) date requested, 2) diagnosis, 3) Requesting physician's name, 4) component requested, 5) signature of verifier, 6) date and time verified, 7) anticipated time of need, 8) patient transfusion history. **Cost:** \$ 19.60

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** At patient's bedside: 1) patient must be positively identified by hospital bracelet on wrist, 2) after patient verification and blood draw, label tube according to collection instructions 3) sign and verify form SF 518 indicating you have drawn specimen from identified patient. **Causes for Rejection:** Misabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A **Comments:** N/A **Use:** To administer RHIG to an Rh negative mother to prevent the formation of Anti-D.

RHIG-Post Partum

SYNONYMS Postpartum RHIG; Postpartum Rhogham **Test Includes:** ABO/RH; Antibody Screen; Fetal Screen **Test Includes:** ABO/RH; Antibody Screen; Fetal Screen

ADMINISTRATION Department: Blood Bank **Request Method:** CHCS Order; SF 518 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine 4-24 hours **Special Instructions:** Submit 1 SF 518 for each unit requested. On SF 518 annotate: 1) date requested, 2) diagnosis, 3) requesting physician's name, 4) component requested, 5) signature of verifier, 6) date and time verified, 7) anticipated time of need, 8) patient transfusion history. **Cost:** \$ 42.00.

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection, and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patients Preparation:** At patient's bedside: 1) patient must be positively identified by hospital bracelet on wrist, 2) after patient verification and blood draw, label tube according to collection instructions, 3) sign and verify form SF 518 indicating you have drawn specimen from identified patient. **Causes for Rejection:** Misabeled specimen or SF 518's, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: N/A **Comments:** N/A **Use:** Test is run after the birth of an Rh positive child to an Rh negative mother to determine amount of THIG to administer in order to prevent the formation of anti-D.

RICKETTSIAL DISEASE PANEL (N) *shipped to outside facility for testing*

RISTOCETIN COFACTOR (N) *shipped to outside facility for testing*

RITALIN (N) *shipped to outside facility for testing*

ROCKY MOUNTAIN SPOTTED FEVER GROUP IFA (VET-BAMC) *shipped to outside facility for testing*

ROCKY MOUNTAIN SPOTTED FEVER PANEL (N) *shipped to outside facility for testing*

ROTAVIRUS (B) *shipped to outside facility for testing*

RPR (Quantitative)

SYNONYMS Rapid Plasma Reagin Test; Syphilis Screening Test; Replaces VDRL; Replaces Kline Test

ADMINISTRATION Department: Serology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 1 to 3 days **Special Instructions:** N/A **Cost:** \$ 9.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 5 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen

INTERPRETATION Normal Range: Non-reactive **Comments:** The RPR is more sensitive than the VDRL. Because of the many causes of false positive tests, any reactive serum is automatically sent to the State Health Department to be tested by the FTA-ABS method. **Use:** Screening test for Syphilis.

RSV Culture (N) *shipped to outside facility for testing*

RUBELLA (Qualitative), IgG

SYNONYMS German Measles Test

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 1 to 3 days **Special Instructions:** N/A **Cost:** \$30.80

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 5 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate plasma up to 48 hours at 2° - 8° C. If longer, store at -20° C or below. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Positive (≥ 10.0 IU/mL) indicates immunity to primary Rubella infections. Negative (< 5.0 IU/mL) indicates insufficient protection to Rubella virus. Equivocal: indicates a repeat test is necessary. Immunity is questionable. **COMMENTS:** Rubella virus is the cause of German Measles. This procedure tests for IgG and IgM antibodies **Use:** Aids in the diagnosis of congenital Rubella infections; evaluates susceptibility to the infection. **Limitations:** The affinity and avidity of Rubella IgG and IgM for the rubella antigen have not been determined with this assay. Some tests that detect both IgM and IgG antibodies may be less sensitive for IgM and IgG. As with other Rubella tests, results from patients in the acute stages of primary infection should be interpreted with caution. Serum specimens with obvious microbial contamination should not be assayed with this method.

RUBELLA IgM & IgG PANEL (N) *shipped to outside facility for testing*

RUBEOLA IgG (B) *shipped to outside facility for testing*

SALICYLATE

SYNONYMS Acetylsalicylic Acid; ASA; Aspirin; Salicylic Acid

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** N/A **Cost:** \$ 11.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Therapeutic range: For analgesic: < 100 mg/L (SI: 0.72 mmol/L); For anti-inflammatory: 150 - 200 mg/L (SI: 1.09 - 1.45 mmol/L); Mild Toxicity: 300 mg/L, Tinnitus dizziness (SI: 2.17 mmol/L); Severe toxicity (Panic Value): > 600 mg/L, CNS effects (SI: 3.62mmol/L) **Comments:** Limitations: Bilirubin (at concentration of 5-20 mg%) has been shown to depress Salicylate results by 1-5 mg%. Sodium azide will increase results significantly. Anticoagulants interfere. **Use:** Monitor therapeutic level; evaluate aspirin toxicity.

SCLERODERMA ANTIBODY (N) *shipped to outside facility for testing*

SEMEN ANALYSIS

SYNONYMS Vasectomy Studies; Sperm Count; Sperm Examination; Infertility Study

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Monday through Friday, 07:30 - 11:00 **Turnaround Time:** 24 hours **Special Instructions:** Order as semen analysis when an infertility workup is needed, and semen post vas when a post vas workup is needed.. Patient should report to Specimen Collection for information on collection procedure. **Cost:** Semen analysis for infertility workup - \$23.80; Semen post vas - \$18.20

SPECIMEN Type: Semen **Volume:** All of ejaculated specimen **Minimum Volume:** Same **Container:** Sterile urine cup **Collection:** It is preferable to collect the specimen in the laboratory. If collected outside of the laboratory, a condom or an artificial preparation should not be used. Induce ejaculation by masturbation, ejaculating directly into the specimen container provided. **Note:** No other specimen container will be acceptable. **Storage:** The specimen should be kept at body temperature by holding it close to the body and brought to the laboratory within 30 minutes after obtaining specimen. **Patient Preparation:** Abstain from intercourse for 4 days prior to collection. **Causes for Rejection:** Untimely delivery of specimen to the laboratory; improperly labeled specimen; improper temperature during transport.

INTERPRETATION Normal Range: For fertility studies: 1. Volume: 1.5-5.0 mL 2. Viscosity: Normal within 30 minutes after collection. 3. Motility: > 60% . 4. Morphology: Normal semen shows fewer than 40% abnormal forms. 5. Count: Normal counts fall in the range of 60-150 million per mL. Counts of less than 20 million per mL are considered abnormal. For Vasectomy: Normal range should be consistent with all normals of fertility studies except no spermatozoa should be present. **Comments:** Low temperature during transport may decrease motility of sperm. **Use:** Infertility Studies and Vasectomy Studies.

SEMEN FRUCTOSE (Q) *shipped to outside facility for testing*

SERUM KETONE

SYNONYMS Ketone, serum

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 13.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Hemolyzed specimen; improperly labeled specimen.

INTERPRETATION Normal Range: Negative **Comments:** N/A **Use:** Evaluate Ketoacidosis of diabetic patients.

SERUM PROTEIN ELECTROPHORESIS (B) *shipped to outside facility for testing*

SICKLE CELL SCREEN

SYNONYMS Sickledex; Sickle Cell Preparation; HgbS Screening Test

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 –24 hours **Special Instructions:** N/A **Cost:** \$11.20

SPECIMEN Type: Blood **Volume:** 4.5 mL in EDTA tube **Minimum Volume:** 0.5 mL in EDTA microtainer **Container:** Purple top tube (EDTA); purple top microtainer (EDTA) **Collection:** Routine venipuncture or fingerstick, depending on the age of patient. Invert gently to mix. **Storage:** Room temperature. Mix specimen until it can be processed. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; clotted specimen.

INTERPRETATION Normal Range: Negative **Comments:** Patients having either sickle cell trait or sickle cell disease will test positive. Hemoglobin electrophoresis should be done to differentiate. **Use:** To detect the presence of Hgb S; evaluation of hemolytic anemia; evaluation of morphologic (sickle-cell) abnormalities on a peripheral smear.

SJOGREN'S SYNDROME ANTIBODY (N) *shipped to outside facility for testing*

SLIDE REVIEW

SYNONYMS External Slide Review; Review, Slide

ADMINISTRATION Department: Anatomic Pathology **Request Form:** Tissue examination SF 515 **Availability:** Monday through Friday, 0730 to 1630. **Turnaround Time:** 24 to 48 hours, on uncomplicated cases **Special Instructions:** Submit all slides, patient history and reports available on specified case.

SPECIMEN Type: Microscopic glass slides and tissue report form from requesting hospital facility **Volume:** N/A **Minimum Volume:** N/A **Container:** Glass slide container to prevent breakage of slides during shipping **Collection:** N/A **Storage:** Glass slide container **Patient Preparation:** N/A **Causes for Rejection:** Unlabeled slides; broken slides; no patient history accompanying slides.

INTERPRETATION Normal Range: N/A **Comments:** N/A **Use:** To confirm diagnosis made at outside hospital; used when care of patient is transferred from one hospital to another.

SODIUM

SYNONYMS Serum Sodium; Na, Serum

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Sodium 137 - 145 mmol/L **Comments:** N/A **Use:** In

Electrolytes Profile; acid-base balance; water balance; water intoxication; diagnosis of dehydration.

SODIUM (RANDOM URINE)

SYNONYMS Random Sodium Urine

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: A Random urine collection is required. **Cost:** \$ 11.20

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** A sterile urine collection cup **Collection:** Collect a random urine specimen **Storage:** Refrigerate after collection.
Patient Preparation: N/A **Causes for Rejection:** Improperly collected specimen; improperly submitted requisition; unrefrigerated specimen

INTERPRETATION Normal Range: 30 – 90 mmol/L **Panic Range** < 20 mmol/L **Comments:** N/A **Use** To study renal and adrenal disorders and water and acid-base imbalances.

SODIUM URINE 24 HOUR PANEL

SYNONYMS Na, Urine; Sodium, Urine; Urine Sodium

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour collection is required. **Cost:** \$ 18.20

SPECIMEN Type: 24 hour urine **Volume:** All of 24 hour specimen. **Minimum Volume:** Same
Container: A 24 hour collection container provided by the laboratory. **Collection:** Instruct patient to void at 0800 and discard the urine. Then collect all urine including the final specimen voided at 0800 the next morning. **Storage:** Refrigerate during and after collection. **Patient Preparation:** N/A **Causes for Rejection:** Improperly collected specimen; improperly submitted requisition; unrefrigerated specimen; not all of the 24 hour specimen submitted.

INTERPRETATION Normal Range: 40 - 220 mmol/day. **Comments:** N/A **Use:** To study renal and adrenal disorders and water and acid-base imbalances.

SOMATOMEDIN C (N) *shipped to outside facility for testing*

SOMATOSTATIN (Q) *shipped to outside facility for testing*

SPECIFIC GRAVITY (BODY FLUID)

SYNONYMS Specific Gravity, Thoracentesis Fluid; Pleural Fluid Specific Gravity; Thoracentesis Fluid Specific Gravity; Specific Gravity, Pleural Fluid

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 -24 hours **Special Instructions:** Deliver to laboratory immediately after collection. **Cost:** \$ 5.60

SPECIMEN Type: Pleural fluid; Thoracentesis fluid **Volume:** 7 mL **Minimum Volume:** 5 mL
Container: Red top tube, stoppered **Collection:** Aseptic collection by physician. **Storage:** Refrigerate if not analyzed immediately. Bring to room temperature prior to testing, if refrigerated. **Patient Preparation:** Collection site is aseptically prepared. **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Transudate < 1.022; Exudate > 1.022. However, these fluids by

their very nature are not normal. **Comments:** Transudates are watery to yellow, clear and do not clot. Exudates may be opaque to purulent, contain fibrinogen and may clot. **Use:** Transudates usually reflect changes in permeability of filtering membranes. Exudates usually result from infections or malignancies.

SPINAL FLUID CULTURE

SYNONYMS CSF culture; Cerebrospinal Fluid Culture lumbar puncture

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 or if computer down **Availability:** Daily **Turnaround Time:** 3-5 days for culture; 1 hour for Gram stain. **Special Instructions:** The request form should give birth date of patient, current antibiotic therapy, clinical diagnosis, and time of collection. If Cryptococcus neoformans is suspected, antigen test should be ordered. Tube disbursement by the laboratory will be as follows: Tube #2 or 3 – Microbiology and Tube #4 if AFB or Fungal cultures or Special studies. **Cost:** \$ 18.20

SPECIMEN Type: CSF **Volume:** 2 mL, if Latex agglutination is ordered simultaneously. If fungal and/or Mycobacterial culture order addition 2 mL of CSF. **Minimum Volume:** 1 mL, if Latex agglutination is not ordered. **Container:** Sterile tube **Collection:** Lumbar puncture by physician following aseptic techniques; tubes should be numbered in sequence of 1, 2, 3, and/or 4 representing the order the tubes were collected. Tube #1 representing the first portion of the sample is recommended for microbiology studies. Contamination with normal flora from skin or other body surfaces must be avoided. Tube #1 has the possibility of an elevated protein and white cell count due to the initial trauma of the puncture. The fluid collected in tube #2 is enough to cleanse and lower the red cell population (a cause of protein elevation). Therefore, tube #2 is best for Chemistry. Tube #3 has the least amount of contamination from the initial puncture and is, therefore, qualified to give a suitable white cell count for Hematology. **Storage:** Transport immediately to the laboratory within 15 minutes of collection. Hand directly to laboratory personnel. **Patient Preparation:** Aseptic preparation of the aspiration site. **Causes for Rejection:** Refrigeration, because extreme cold inhibits the growth of certain aerobic bacteria such as Neisseria meningitidis, and Haemophilus influenzae; improperly labeled specimen; untimely delivery of the specimen to the laboratory, greater than 15 minutes.

INTERPRETATION Normal Range: No aerobic growth for culture, no bacteria seen for Gram stain. **Comments:** In partially treated cases, gram positive organisms may stain as gram negative organisms. Special antigen testing, fungal culture, Viral culture and Mycobacterial cultures are sent out. India ink for Cryptococcus is discouraged because of its lack of sensitivity and specificity as compared to antigen testing. Anaerobic cultures on CSF are inappropriate. Brain abscess or tissue collected and transport anaerobic is the correct type of specimen. **Use:** To isolate and identify pathogenic organisms that cause meningitis.

SPUTUM CULTURE

SYNONYMS Sputum Culture transtracheal aspirate, tracheal, Bronchial alveolar lavage; Lower Respiratory Tract Culture

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 or if computer down **Availability:** Daily **Turnaround Time:** 2 - 5 days **Special Instructions:** Ensure laboratory requisition or CHCS order reflects source of specimen, current antibiotic therapy, clinical diagnosis, time of collection and age of patient. **Cost:** \$ 13.00

SPECIMEN Type: Sputum (aerobic organisms only), washing, aspirate **Volume:** All of specimen submitted **Minimum Volume:** 1 mL **Container:** Sterile container with screw top lid; separate specimen and container for AFB or Fungal Cultures **Collection:** Deep cough or mechanically induced. **Storage:** Transport to laboratory immediately within 1 hour. Refrigerate sputum if delayed, but not more than 4 hours before delivering to the laboratory for processing. **Patient Preparation:** Instruct patient to remove dentures, rinse mouth, and gargle with water prior to sputum collection. Cough deeply expectorating sputum into the collection container. **Causes for Rejection:** Specimens contaminated on the outside of the

container pose excessive risk to laboratory personnel and will not be accepted; improper labeling of specimen; saliva will not be accepted; untimely delivery to the laboratory.

INTERPRETATION Normal Range: Normal oropharyngeal flora **Comments:** Gram Stains are performed on sputums to grade specimen quality. 25 or more squamous epithelial cells per low power field indicate marked upper-respiratory contamination. 10 squamous epithelial cells or less per low power field is an indicator of a good lower respiratory track specimen. Quantitative brush washing are not performed. For bronchial or lung biopsy, see tissue culture. **Use:** Isolate and identify potentially pathogenic organisms present in the lower respiratory tract (aerobic organisms only). Legionella, fungal, mycobacteria, viral, and parasitic isolations are sent to reference laboratories. Pertussis and diphtheria are also handled as special isolation procedures.

SQUAMOUS CELL CARCINOMA ANTIGEN (N) *shipped to outside facility for testing*
STACLOT-LA (B) *shipped to outside facility for testing*

STOOL/ANAL CULTURE

SYNONYMS Bacterial Stool, Rectal Swab, Fecal culture, anal

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 48 to 72 hour **Special Instructions:** Laboratory should be informed of the specific pathogen suspected if not Salmonella, Shigella, or Campylobacter (Yersinia, Vibrio, Hemorrhagic E. coli, Clostridium botulinum, Bacillus cereus, Clostridium perfringens and Staphylococcus aureus) **Cost:** \$ 21.00

SPECIMEN Type: Fresh random stool or swab **Volume:** An adequate amount for culture plating **Minimum Volume:** Same **Container:** Aerobic Culturette, Fresh random stool - sterile container (if transport immediately), Modified Carey - Blair media, Culturette swab (not optimum type of specimen) **Storage:** Fresh stool transport to lab within 2 hours. If Modified Carey - Blair media can be refrigerated up to 24-48 hours. The sooner the better to transport. Swabs: 24 hours. **Collection:** N/A **Storage:** N/A **Patient Preparation:** Insert the swab past the anal sphincter, move the swab circumferentially around the anus. Allow 15-30 seconds for organism absorption onto the swab. Withdraw and place into the Culturette holder. Remember to crush the media ampule. **Causes for Rejection:** Specimen contaminated with urine will be rejected. Those specimens containing interfering substances such as Castoroic, Metamucil or Barium with noted delays in transport will not have an optimal field and will therefore be rejected. All specimens should be delivered within 2 hours of collection. Dry rectal swabs and multiple specimens collected on same day or within 24 hours will be rejected.

INTERPRETATION Normal Range: No Enteric Pathogens isolated, (specific, Salmonella, Shigella, or Campylobacter) isolated **Comments:** Yersinia spp. and Vibrio spp. may not be isolated unless specifically requested on the requisition. Rectal swab should not be used for detection of carrier state and is generally less satisfactory than culture of a stool specimen. Leukocytes indicates colonic inflammation rather than specific pathogen. Bacterial diarrhea may be present in the absence of fecal leukocytes and fecal leukocytes may be present in the absence of bacterial pathogens, for example, idiopathic inflammatory bowel disease. Patients who develop diarrhea after being hospitalized for 3 days, probably do not have an enteric pathogen. Antimicrobial therapy can cause diarrheal disease caused by Clostridium difficile, Staphylococcus aureus, yeast (usually Candida spp.), and Pseudomonas aeruginosa. Culture for Clostridium difficile is not recommended; assay for its toxin A is more diagnostic. **Use:** Screen for bacterial pathogenic organisms in the stool. **Limitations:** Besides what is mentioned, non-bacterial pathogens (such as viruses) need to be isolated by other methods.

SWEAT CHLORIDE

SYNONYMS Cystic Fibrosis Screen

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous

SF 557 **Availability:** By Appointment **Turnaround Time:** 2 hours **Special Instructions:** The patient must be at least 48 hours old and fever free **Cost:** \$ 30.00

SPECIMEN Type: Sweat **Volume:** As much as collected **Minimum Volume:** 30 –40 uL **Container:** Macroduct Sweat Collection System **Collection:** Iontophoresis **Storage:** Refrigerate **Patient Preparation:** Contact Lab for Appointment **Causes for Rejection:** Patient ill with fever or unable to sweat.

INTERPRETATION Normal Range: <50 mmol/L NaCl; Equivocal: 50 – 95 mmol/L NaCl; Positive: > 95 mmol/L NaCl **Comments:** Cystic Fibrosis Foundation recommends patients with conductivity greater than 50 mmol/L of Sodium Chloride be referred to a CF Center for quantitative testing. **Use:** Screening Test for Cystic Fibrosis. This test should not be used for diagnosis.

SYNOVIAL FLUID CHEMISTRY PANEL

SYNONYMS Joint Fluid

TEST INCLUDES Glucose, Uric Acid, Total Protein. Additional tests can be ordered such as pH, specific Gravity, or crystal examination

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557; **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** Preferred fasting **Cost:** \$21.00

SPECIMEN Type: Synovial Fluid **Volume:** 10 mL **Minimum Volume:** 5 mL **Container:** Green top/ Sterile container **Collection:** Aseptic withdrawal by physician/ draw a red top blood specimen also for comparison **Storage:** Separate and refrigerate specimen after processing **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Glucose: 70 –100 mg/dL; Total Protein: 1 –3 mg/dL; Uric Acid have no established normal range **Comments:** Low Glucose indicative of bacterial infection. Elevated Uric Acid is indicative of Gout. Total protein's are Transudate: < 3.0 gm/dL and Exudate: > 3.0 gm/dL. **Use:** Differentiation of exudates from transudates or disease states.

T3 FREE/TOTAL T3 RIA PANEL (N) *shipped to outside facility for testing*

T3-FREE (A) *shipped to outside facility for testing*

TCELL SUBSET PANEL (N) *shipped to outside facility for testing*

TESTOSTERONE (BAMC) *shipped to outside facility for testing*

TESTOSTERONE, FREE (N) *shipped to outside facility for testing*

TETANUS ANTITOXID ELISA (N) *shipped to outside facility for testing*

THALLIUM (N) *shipped to outside facility for testing*

THALLIUM, 24-HOUR URINE (N) *shipped to outside facility for testing*

THEOPHYLLINE

SYNONYMS Aminophyllin; Theo-Dur, Theo-Bid

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour

Special Instructions: N/A **Cost:** \$22.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 2 mL **Container:** Red or green top tube **Collection:** Measures Peak and Trough. Ideally, measure Peak serum Theophylline when continuous Theophylline therapy has been administered to the patient for 48 hours. Then draw Peak: 2 hours after the dose for rapid dissolution; draw Peak: 4 to 6 hours after the dose for sustained release. Always draw Trough: Just prior to the next dose. **Storage:** Refrigerate **Patient Preparation:** Routine venipuncture **Causes for Rejection:** Improperly labeled specimen (Peak and Trough must annotated on specimen tube.)

INTERPRETATION Normal Range: Therapeutic range: 10 - 20 ug/mL; Panic values: > 25 ug/mL **Comments:** N/A **Use:** To monitor therapeutic drug level; detection of noncompliance and of subtherapeutic levels; attempt to predict Theophylline toxicity.

THIAMINE (VITAMIN B1) (N) *shipped to outside facility for testing*

THYROGLOBULIN (Q) *shipped to outside facility for testing*

THYROGLOBULIN ANTIBODY PANEL (A) *shipped to outside facility for testing*

THYROID RELEASING HORMONE (Q) *shipped to outside facility for testing*

THROAT CULTURE, (or Nasal pharyngeal) ROUTINE

SYNONYMS Larynx, epiglottis, nasal pharyngeal, sinus

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** Generally 24-48 hours **Special Instructions:** Inform the laboratory of any current antibiotic therapy and clinical diagnosis. Do not swab tongue or uvula. **Cost:** \$ 16.80

SPECIMEN Type: Throat swab or nasal pharyngeal **Volume:** Adequate swabbing of throat or nasao pharangeal **Minimum Volume:** Same **Container:** Aerobic sterile Culturette **Collection:** The tongue should be depressed while both Tonsilla pillars and pharynx are swabbed. The tongue and uvula should be avoided. Nasal pharyngeal cultures should be taken with the wire swab or nasal pharyngeal swab. Indicate type or location of specimens. **Storage:** Deliver to laboratory within 24 hours **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; untimely delivery of specimen to the laboratory, greater than 24 hours.

INTERPRETATION Normal Range: Normal respiratory flora isolated **Comments:** Group A Beta-hemolytic Streptococcus is generally susceptible to penicillin and its derivatives. Therefore, susceptibility is not routinely determined. Do not swab throat in cases of acute epiglottitis! This procedure does not include screening for Neisseria gonorrhea. If a culture for Neisseria gonorrhea is also needed, refer to Endocervical, Urethral and Oropharyngeal for GC culture. If screening for Group A Streptococcus only refer to Group A Strep Screen (throat) Cultures. Routine can pick up other upper respiratory pathogens such as: S. pneumonia, H. influenzae, other Beta Hemolytic Strep. Moraxella (Branhamella) catarrhalis, S. aureus, Enteric Gram neg rods. For sinusitis, only acceptable specimen is needle aspirate of sinus cavity. Sinus lavage fluid, nares, nasopharynx are not appropriate for sinusitis. **Use:** Identify upper respiratory pathogen from the throat. **Limitation:** Pertussis and Diphtheria take special procedures.

THYROID STIMULATING HORMONE

SYNONYMS TSH; Thyrotropin; Thyrotropin Stimulating Hormone; S-TSH; U-TSH; Ultrasensitive TSH

ADMINISTRATION Department: Special Chemistry **Request Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hour; Routine: 4 - 24 hours. This test is run daily, Monday - Friday **Special Instructions:** N/A **Cost:** \$ 36.40

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Storage: Separate and freeze serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: 0.47 uIU/mL – 5.0 uIU/mL **Comments:** Thyroid Stimulating Hormone (TSH) is used eight weeks post therapy or to screen for thyroid function. If TSH Screen test is selected from the CHCS Menu, any abnormal values will automatically reflex to the addition of a Free T4.
Use: Thyroid function test; investigation of low T4 results; a screening test for thyroid disease.

THYROID STIMULATING IMMUNOGLOBULINS & THYROID BINDING IMMUNOGLOBULINS
PANEL (N) shipped to outside facility for test

TORCH ANTIBODY PANEL (A) shipped to outside facility for testing

TOTAL BILIRUBIN

SYNONYMS Bili; T. Bili; T. Bil; Total Bilirubin; Bilirubin, Total

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour
Special Instructions: N/A **Cost:** \$ 8.00

SPECIMEN Type: Blood **Volume:** 7 mL or Natelson Tube **Minimum Volume:** 3 mL or Natelson Tube. Check for excessive bubbles **Container:** Red or green top tube or Natelson Tube **Collection:** Routine venipuncture, fingerstick or heelstick depending on age. When collecting heelstick or fingerstick, collect in such a manner to obtain an even, constant flow of blood. Forceful excessive squeezing hemolyzes specimen and causes erroneous results. **Storage:** Bring to laboratory within 30 minutes. Must be protected from light. **Patient Preparation:** In fingerstick or heelstick collection, do not squeeze excessively. **Causes for Rejection:** Hemolysis; improperly labeled specimen; untimely delivery to laboratory (not within 30 minutes of collection).

INTERPRETATION Normal Range: Adult: 0.2 - 1.3 mg/dL; **Comments:** A Cord Blood Total Bilirubin is submitted by the Blood Bank section when the cord blood has a Positive Direct Coombs. The Normal Range for a Cord Blood Total Bilirubin is 0.7 - 3.1 mg/dL **Use:** Elevated in liver disease, hepatitis, cholangitis, cirrhosis, other types of liver disease, alcoholism, biliary obstruction and infectious mononucleosis.

TOTAL CALCIUM (B) shipped to outside facility for testing

TOTAL PROTEIN 24 HR URINE

SYNONYMS Urine Protein; Microalbuminuria; Protein, Quantitative, Urine

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Refrigerate specimen during and after collection period. Label the 24 hour urine container with the patient's name, date and time collection started and finished. **Cost:** \$18.20

SPECIMEN Type: 24 hour urine **Volume:** All of 24 hour urine specimen collected **Minimum Volume:** Same **Container:** 24 hour urine container **Collection:** 24 hour collection **Storage:** Refrigerate during and after collection **Patient Preparation:** Instruct patient to void at 0800 and discard the specimen. Then collect all urine including the final specimen voided at the end of the 24 hour collection period, i.e., 0800 the next morning. **Causes for Rejection:** Unrefrigerated specimen during collection period; improperly labeled specimen; not all of 24 hour urine specimen submitted.

INTERPRETATION Normal Range: 42 - 225 mg/day **Comments:** Certain drugs and exercise may elevate urinary protein **Use:** One of the more sensitive tests useful in detecting renal diseases of the glomerulus and tubules; used as an attempted prediction of subsequent development of proteinuria, diabetic nephropathy and early mortality in Type 1 and/or Type II Diabetes; useful in the management of patients with relatively early Diabetes Mellitus, to try to avoid or delay the onset of diabetic renal disease.

TOTAL PROTEIN URINE (RANDOM)

SYNONYMS Urine Protein Random

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Refrigerate specimen after collection period. **Cost:** \$ 7.00

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** Sterile urine cup or container **Collection:** Random urine collection **Storage:** Refrigerate after collection **Patient Preparation:** N/A **Causes for Rejection:** Unrefrigerated specimen after collection period; improperly labeled specimen.

INTERPRETATION Normal Range: < 12 mg/dL **Comments:** Certain drugs and exercise may elevate urinary protein **Use:** One of the more sensitive tests useful in detecting renal diseases of the glomerulus and tubules; used as an attempted prediction of subsequent development of proteinuria, diabetic nephropathy and early mortality in Type 1 and/or Type II Diabetes; useful in the management of patients with relatively early Diabetes Mellitus, to try to avoid or delay the onset of diabetic renal disease.

TOTAL PROTEIN (SPEP) *shipped to outside facility for testing*

TOTAL T3 (A) *shipped to outside facility for testing*

TOXOCARA ANTIBODY, ELISA (N) *shipped to outside facility for testing*

TOXOPLASMA ANTIBODY PANEL (A) *shipped to outside facility for testing*

TRANSFERRIN (BAMC) *shipped to outside facility for testing*

TRAZODONE (N) *shipped to outside facility for testing*

TRICHOMONAS VAGINALIS

SYNONYMS None.

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP 2 hours; Routine 4-8 hours. **Special Instructions:** N/A **Cost:** \$ 9.80

SPECIMEN Type: Urine **Volume:** 15 mL **Minimum Volume:** 5 mL **Container:** Urine collection cup. **Collection:** Random specimens **Storage:** Bring to laboratory immediately. DO NOT STORE. **Patient Preparation:** Do not perform clean catch procedures. **Causes for Rejection:** Specimen older than 2 hours, improperly labeled or unlabeled specimen.

INTERPRETATION Normal Range: None present. **Comments:** N/A. **Use:** Screen for presence of Trichomonas vaginalis parasites in urine.

TRICYCLIC ANTIDEPRESSANTS

SYNONYMS Serum Drug Screen; Antidepressants; TCA; Tetracyclic Antidepressants

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 – 24 hours **Special Instructions:** Document patient therapy on order **Cost:** \$ 28.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improper labeling of specimen.

INTERPRETATION Normal Range: Amitriptyline: 120-250 ng/mL; Nortriptyline: 50–150 ng/mL; Imipramine: 150-250 ng/mL; Desipramine: 150-300 ng/mL All are toxic > 400 ng/mL **Comments:** Tricyclic antidepressants are metabolized to secondary active compounds. These agents are useful in treating clinical depression. However, they show a narrow therapeutic window, and great individual variations in blood levels associated with dosage. **Use:** Therapeutic monitoring; toxicity assessment.

TRIGLYCERIDE

SYNONYMS Trig; TGL; Triacylglycerols

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Patient must be fasting at least 12-14 hours prior to being drawn. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube **Collection:** Routine venipuncture, avoid glycerol coated vacutainer tubes. **Storage:** Separate and refrigerate serum after processed **Patient Preparation:** Patient must be fasting at least 12-14 hours prior to collection. **Causes for Rejection:** Hemolysis; improperly labeled tube; non fasting specimen; specimen collected in glycerol coated container.

INTERPRETATION Normal Range: < 200 mg/dL; Borderline 200-399 mg/dL; High 400-1000 mg/dL **Comments:** Positive interference is caused by glycerol and other polyols. Triglyceride is a glycerol with three fatty acids. Some women on estrogen and high estrogen oral contraceptives have an increase of triglycerides. **Use:** Evaluation of turbid samples of blood, plasma, and serum; work-up of chylomicronemia; evaluation of hyperlipidemia.

TRIPLE MARKER SCREEN PANEL (A) *shipped to outside facility for testing*

TROPONIN I

SYNONYMS Cardiac Troponin I (cTnI)

ADMINISTRATION Department: Special Chemistry **Request Method and Required Form:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT – 1 hour, ASAP – 2 hours or routine – 4-24 hours. **Special Instructions:** N/A **Cost:** \$45.00

Specimen Type: Blood **Volume:** 5mL **Minimum Volume:** 3mL **Container:** Lithium heparin green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate plasma **Patient Preparation:** N/A **Causes for rejection:** Hemolysis; improperly labeled specimen; turbidity

INTERPRETATION Normal Range: < 0.08ng/mL **Comments:** A value of 0.4 ng/mL or higher indicates the amount of myocardial injury present is extensive enough to conform to a Myocardial Infarction. Values between 0.08 – 0.4 ng/mL indicate minor myocardial injury. **Use:** Diagnosis of Myocardial Infarction.

TRYPTASE (N) *shipped to outside facility for testing*

TULAREMIA ANTIBODY (A) *shipped to outside facility for testing*

TYPE AND CROSS 1-6 units (Must request number in CHCS)

SYNONYMS Crossmatch; T&C

TEST INCLUDES ABO/Rh; Antibody Screen; Compatibility

ADMINISTRATION Department: Blood Bank **Request Method and Required Form:** CHCS Order; SF 518. **Availability:** Daily **Turnaround Time:** STAT within 1 hour. ASAP within 2 hours; ROUTINE 4-24 hours. **Special Instructions:** Submit 1 SF 518 for each unit requested. On SF 518 annotate: 1) date requested, 2) diagnosis, 3) requesting physician's name, 4) component requested, 5) signature of verifier, 6) date and time verified, 7) anticipated time of need, 8) patient transfusion history. **Cost:** \$ 30.80 one unit; \$42.00 for two units; \$53.20 for three units; \$64.40 for four units; \$ 75.60 for five units; \$ 86.80 for six units.

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube. **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Patient Preparation:** At patient's bedside: 1) patient must be positively identified by hospital bracelet on wrist, 2) after patient verification and blood draw, label tube according to collection instructions, 3) sign and verify form SF 518 indicating you have drawn specimen from identified patient. **Causes for Rejection:** Mislabeled specimen or SF 518's, grossly hemolyzed specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: Compatible-donor cells are compatible to be transfused to patient. **Comments:** If antibody screen comes up positive an antibody identification will automatically be done, one a clinically significant antibody has been identified the crossmatched units will be phenotyped. **Use:** Full pretransfusion testing is performed. This includes ABO group, Rh type, antibody screen, and crossmatch. The crossmatch provides evidence of SBO compatibility and to help detect antibodies in recipients whose serum is incompatible with donor red cells. Units crossmatched will be held for 72 hours in the Blood Bank. **Limitations:** No test can give 100% assurance that the donor RBC's will not be destroyed by antibodies in the patient's blood. Most deaths or harmful reactions caused by hemolytic transfusion reactions are due to the improper identity of the patient involving actual patient ID, the patient blood specimen request form, or donor RBC unit. These errors occur when collecting the patients blood for the crossmatch tests, when performing the crossmatch, or when starting the transfusion.

TYPE AND SCREEN

SYNONYMS T&S

TEST INCLUDES ABO/Rh; Antibody Screen

ADMINISTRATION Department: Blood Bank **Request Method and Required Form:** CHCS Order; SF 518; SF 557; SF 556 **Availability:** Daily **Turnaround Time:** STAT 1 hour; ASAP 2 hours; ROUTINE 4 - 24 hours. **Special Instructions:** Submit 1 SF 518 for each unit requested. On SF 518 annotate: 1) date requested, 2) diagnosis, 3) requesting physician's name, 4) component requested, 5) signature of verifier, 6) date and time verified, 7) anticipated time of need, 8) patient transfusion history. **Cost:** \$ 19.60.

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** 7 mL pink top (EDTA) tube **Collection:** Routine venipuncture. Ensure proper mixing with anticoagulant to prevent clot from forming. Specimen must be labeled with the patient's full name, FMP/Sponsor SSN, date and time of collection and phlebotomist's initials. **Storage:** Transport to lab ASAP, if delayed more than 12 hours, specimen must be centrifuged and plasma separated from red cells. Specimen must be refrigerated. DO NOT FREEZE. Specimen will be kept in blood bank for 2 weeks. **Patient Preparation:** At patient's

bedside: 1) Patient must be positively identified by hospital bracelet on wrist, 2) After patient verification and blood draw, labeled tube according to collection instructions, 3) sign and verify form SF 518 indicating you have drawn specimen from identified patient. **Causes For Rejection:** Mislabeled specimen or SF 518s, grossly hemolyzed specimen, specimen drawn in a serum separator tube.

INTERPRETATION Normal Range: If antibody screen comes up positive; antibody identification will automatically be done. Once a clinically significant antibody has been identified the T&S will automatically be converted to a type and cross and units phenotyped. **Comments:** N/A. **Use:** Used primarily for elective surgical procedures where the probability of transfusing blood is historically low. An ABO/Rh and antibody screen will be performed on the patient. The SF 518 and accompanying patient specimen will be held in the Blood Bank for 72 hours. In the event blood is requested for the patient, a crossmatch can be performed.

UPEP PANEL (B) *shipped to outside facility for testing*

UREA NITROGEN

SYNONYMS BUN; Urea Nitrogen, Blood; Blood Urea Nitrogen

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** Preferred fasting **Cost:** \$ 7.00
SPECIMEN Type: Blood **Volume:** 3 mL **Minimum Volume:** 1 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum after processing **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Male: 9 - 20 mg/dl; Female: 7 - 17 mg/dl **Comments:** Urea nitrogen reflects the ratio between urea production and clearance. Increased BUN may be due to increased or decreased excretion. **Use:** Primarily used as a test for renal function. A BUN greater than 100 mg/dl has been used in the definition of uremia.

UREA NITROGEN URINE 24 HOUR

SYNONYMS UUN; Urine Urea Nitrogen

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour urine specimen is required. **Cost:** \$ 9.80

SPECIMEN Type: 24 hour urine **Volume:** All of the 24 hour collection **Minimum Volume:** Same **Container:** A 24 hour collection container provided by the laboratory **Collection:** Instruct patient to void at 0800 and discard urine. Then collect all urine including final specimen voided at 0800 the next morning. **Storage:** Refrigerate during and after collection **Patient Preparation:** N/A **Causes for Rejection:** Improper collection or improperly submitted requisition; unrefrigerated specimen.

INTERPRETATION Normal Range: 12 - 20 gm/day **Comments:** N/A **Use:** Can be elevated in increased dietary protein, hyperthyroidism, and postoperative patients; can be decreased in growing children, infants, pregnancy, low protein and high carbohydrate diets, convalescent patients, liver disease, toxemia, renal damage and insufficiency from any cause.

URIC ACID

SYNONYMS N/A

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hour

Special Instructions: N/A **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 4 mL **Container:** Red or green top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum after processed **Patient Preparation:** Preferred fasting **Causes for Rejection:** Hemolysis; lipemia; improperly labeled specimen.

INTERPRETATION Normal Range: Male: 3.5 - 8.5 mg/dL; Female: 2.5 - 7.5 mg/dL **Comments:** Uric acid may be increased with body size, exercise and stress. An increased uric acid level does not necessarily translate to a diagnosis of gout; about 10 to 15 percent of instances of hyperuricemia are caused by gout. **Use:** Elevations of uric acid occur in renal diseases with renal failure and prerenal azotemia as well as gout. Drugs causing increased uric acid concentration include diuretics, pyrazinamide, thambutol, nicotinic acid, and aspirin in low doses. Low uric acid levels can be seen in two-thirds of Ramsdell's and Kelly's series of hypouricemia patients, drugs apparently bearing a relationship to low serum uric acid levels including high doses of aspirin, X-ray contrast agent and massive doses of vitamin C.

URIC ACID URINE (RANDOM)

SYNONYMS Random Urine Uric Acid

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour urine specimen is required. **Cost:** \$ 7.00

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** Sterile urine cup or container. **Collection:** Random urine specimen **Storage:** Refrigerate after collection **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen

INTERPRETATION Normal Range: No established normal range **Comments:** 24 Hour uric acid is most often measured in patients with nephrolithiasis, in whom it is desirable to know the excretion of uric acid and other substances on the patient's usual diet. A number of drugs affect uric acid excretion including aspirin, other anti-inflammatory preparations, X-Ray contrast agents, Vitamin C, and Warfarin. Diuretics decrease uric acid excretion. **Use:** Investigate hyperuricosuria in patients with renal calculus formation; identification of overexcretors; identification of potential risks of stone formation; identification of genetic defects; influence of overexcretion on therapy of gout

URIC ACID URINE PANEL 24 HOUR

SYNONYMS 24 Hour Urine Uric Acid

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour urine specimen is required. **Cost:** \$ 14.00

SPECIMEN Type: 24 hour urine **Volume:** All of 24 hour collection **Minimum Volume:** Same **Container:** A 24 hour collection container provided by the laboratory **Collection:** Instruct patient to void at 0800 and discard the urine. Then Collect all urine including the final specimen collected at 0800 the following morning. **Storage:** Refrigerate during and after collection **Patient Preparation:** N/A **Causes for Rejection:** Improper collection; improperly submitted requisition; unrefrigerated specimen; not all of 24 hour urine collection submitted.

INTERPRETATION Normal Range: 250 - 750 mg/day **Comments:** 24 Hour uric acid is most often measured in patients with nephrolithiasis, in whom it is desirable to know the excretion of uric acid and other substances on the patient's usual diet. A number of drugs affect uric acid excretion including aspirin, other anti-inflammatory preparations, X-Ray contrast agents, Vitamin C, and Warfarin. Diuretics decrease uric acid excretion. **Use:** Investigate hyperuricosuria in patients with renal calculus formation; identification of overexcretors; identification of potential risks of stone formation; identification of genetic defects; influence of overexcretion on therapy of gout.

URINALYSIS

SYNONYMS UA; Routine UA

ADMINISTRATION Department: Urinalysis **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 2 to 4 hours **Special Instructions:** Indicate on slip if specimen is a "clean catch" or "catheterized" urine. **Cost:** \$ 5.60

SPECIMEN Type: Urine **Volume:** 15 mL **Minimum Volume:** 5 mL **Container:** Sterile urine collection cup or tube for specimens to be cultured; urine collection cup or tube for specimens that are not to be cultured. **Collection:** First morning, clean catch urine is preferred. Random specimens are acceptable. **Storage:** Store refrigerated. If unable to bring to laboratory within 1/2 hour after collection, store refrigerated for no longer than 2 hours before bringing to laboratory. **Patient Preparation:** If clean catch midstream procedure is required, males should clean head of penis with soap and rinse. If not circumcised, pull the foreskin back and urinate into toilet. Catch midstream urine in specimen cup. Females should clean labia from front to back with soap. Urinate into toilet and catch urine in midstream in the specimen cup. See Nursing procedure for "catheterized" urine. **Causes for Rejection:** Specimen older than 2 hours; sample volume quantity not sufficient; improperly labeled or unlabeled specimen.

INTERPRETATION Normal Range:

<u>Physical/Chemical Test</u>	<u>NORMAL REFERENCES</u>
Appearance (turbidity)	Clear
Color	Yellow
Specific gravity	1.001 - 1.035
Urobilinogen	0.2 - 1.0 mg/dL or Ehrlich units/dL
Occult blood	Negative
Bile (Bilirubin)	Negative
Ketones	Negative
Glucose	Negative
Protein	Negative
pH	5 - 8
Leukocyte Esterase	Negative
Nitrite	Negative
Microscopic (if Iris)	Normal urine may contain few squamous cells and light mucus

Comments: Reducing sugar testing will only be performed on children with negative urine glucose results when ordered by a Health Care Provider. Urinalysis testing includes: Color, Appearance, Specific Gravity, Urobilinogen, Occult blood, Bile, Ketones, Glucose, Protein, Leukocyte esterase, Nitrite. If performed on the Iris, a microscopic exam will be included. If the Iris is not functional, microscopic evaluation will not be routinely performed unless one of the following is present: (1) Urine turbidity is hazy. (2) Urine dipstick results are Trace or greater for blood or Leukocytes, 1+ or greater for protein. (3) A urine microscopic is requested by the physician. Back up tests ordered by the lab to verify results from UA (these tests are not ordered by the physician) are Acetest, clinitest, Ictotest, Sulfosalicylic acid, and refractometer specific gravity. **Use:** Screen for abnormalities of urine; diagnosis and management of renal diseases, urinary tract infection, urinary tract neoplasm, systemic diseases, and inflammatory or neoplastic diseases adjacent to the urinary tract.

URINE CULTURE, Catheter

SYNONYMS Catheter Urine Culture; Ileol conduit; Suprapubic Puncture Culture; Straight catheter (in/out catheter); Bladder washout test (Fairly); bilateral urethral catheter (Cystoscopy)

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 48 hours **Special Instructions:** On laboratory request slip indicate whether specimen is catheterized or suprapubic puncture. **Cost:** \$ 16.80

SPECIMEN Type: Urine **Volume:** 5 mL **Minimum Volume:** 1 to 2 mL **Container:** Sterile tube or sterile urine cup. **Collection:** An early morning specimen yields the highest bacterial counts from overnight incubation in the bladder. Forced fluids for CCMS dilute the urine and may cause reduced colony counts. **Storage:** Can refrigerate the specimen up to 24 hours, if delivery to the laboratory is delayed more than 2 hours after collection. **Patient Preparation:** (A.) If suprapubic puncture is performed, aseptic preparation of the aspiration site is necessary. Avoid normal skin flora contamination. Fluids are forced prior to collection to distend the bladder. Six to ten hours are required for the bladder to fill. For Ileol conduit: 1.) Remove the external urinary appliance, and discard the urine within the appliance. 2.) Gently swab and clean the stomal opening with a 70% alcohol pad and then with an iodine solution (1 to 2% tincture of iodine or a 10% solution of povidone iodine (1% free iodine)) - If patient is not allergic to iodine. Remove excess tincture with 70% alcohol after procedure to avoid burn. 3.) Using sterile technique, insert a double catheter into the stoma. 4.) Catheterize the ileol conduit to a depth beyond the fascial level. 5.) Collect the urine drained into a sterile container. Refer to other procedural manuals (nursing, etc.) for other collection procedures of contact Microbiology. Do not collect urine from collection bags. Use scrupulous aseptic technique to avoid introducing microorganisms. **Causes for Rejection:** Unrefrigerated specimen older than 1 hour may be subject to overgrowth and may not yield valid results; improperly labeled specimen. Foley catheter tips are unacceptable for culture. **INTERPRETATION Normal Range:** No aerobic growth. For suprapubic puncture, no aerobic or anaerobic growth. **Comments:** Bacteria present in numbers less than 100 organisms per mL may not be detected by catheter methods. A culture of specimen from a foley catheter yielding multiple organisms with high colony counts may represent colonization of the catheter and not a truly significant bacteruria, or it was not collected or/and ordered properly. For suprapubic puncture specimen, an anaerobic culture needs to be ordered in addition to urine catheter culture if anaerobes are suspected (and also collected) transported in a manner for anaerobic culture. **Use:** To isolate and identify potentially pathogenic organisms causing tract infection.

URINE CULTURE, CLEAN CATCH

SYNONYMS Routine Urine Culture; Culture, Urine; Clean Catch Midstream Culture

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 48 hours **Special Instructions:** On laboratory request slip, indicate whether specimen is catheterized, clean catch or suprapubic puncture. **Cost:** \$ 16.80

SPECIMEN Type: Urine **Volume:** 5 mL **Minimum Volume:** 1 - 2 mL **Container:** Sterile tube or sterile urine cup. **Collection:** An early morning specimen yields the highest bacterial counts from overnight incubation in the bladder. Forced fluids for CCMS dilute the urine and may cause reduced colony counts. **Storage:** Can refrigerate the specimen up to 24 hours, if delivery to the laboratory is delayed more than 2 hours after collection. **Patient Preparation:** Avoid normal skin flora contamination. Fluids are forced prior to collection to distend the bladder. Six to ten hours are required for the bladder to fill. If clean catch midstream procedure is required, males should clean head of penis with soap and rinse. If not circumcised, pull the foreskin back and urinate into toilet. Catch midstream urine in specimen cup. Females should clean labia from front to back with soap. Urinate into toilet and catch urine in midstream in the specimen cup. **Causes for Rejection:** Unrefrigerated specimen older than 1 hour may be subject to overgrowth and may not yield valid results; improperly labeled specimen.

INTERPRETATION Normal Range: No aerobic growth. **Comments:** Bacteria present in numbers less than 1,000 organisms per mL may not be detected by routine methods. Urine specimen need to be processed as soon as possible. Refrigerated specimens only slow the rate of growth, it does not inhibit the

growth. **Use:** To isolate and identify potentially pathogenic organisms causing tract infection.

URINE DRUG SCREEN (TRIAGE) PANEL

SYNONYMS Tox Screen, Urine; Drug Screen, Urine; Urine Drugs of Abuse Screen; Urine Drug Screen

TEST INCLUDES Amphetamines, Barbiturates, Phencyclidine, Benzodiazepines, Cocaine, Cannabinoids/THC, and Opiates

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 556 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 – 24 hours **Special Instructions:** Specify the drug or drugs suspected in an emergency situation. **Cost:** \$ 32.30

SPECIMEN Type: Random urine **Volume:** 100 mL **Minimum Volume:** 10 mL **Container:** Urine cup **Collection:** Clean catch **Storage:** Refrigerate **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: Negative or none detected **Comments:** The drug screens performed at GLWACH are for medical purposes only. Urine is the specimen of choice. Legal urine drug screens are processed through the soldier's unit coordinator. **Use:** Screening for drugs of abuse in a urine specimen.

URINE ELECTROLYTE PANEL

SYNONYMS Lytes, Urine; Urine Electrolytes (24 Hour) or (Random); Urine Lytes , 24 Hour Urine Electrolytes, Random Urine Electrolytes

TEST INCLUDES Urine Sodium, Urine Potassium, Urine Creatinine

ADMINISTRATION Department: Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** ASAP: 2 hours; Routine: 4 to 24 hour **Special Instructions:** A 24 hour specimen is preferred. There are no normal values available for a random specimen. **Cost:** \$ 32.20

SPECIMEN Type: 24 hour or random urine **Volume:** All of the 24 hour urine specimen, 15 mL of the random specimen **Minimum Volume:** All of the 24 hour urine specimen, 7 mL of the random specimen **Container:** 24 hour collection container or clean catch urine container **Collection:** For the 24 hour specimen, instruct the patient to void at 0800 and discard the specimen. Collect all urine including the final urine specimen at 0800 the following day; for random specimen, clean catch specimen **Storage:** Refrigerate during and after collection period. **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen; not all of 24 hour urine submitted; blood in urine.

INTERPRETATION Normal Range: For 24 hour urine specimens : Sodium: 20 - 220 mmol/day; Potassium: 25 - 125 mmol/day; Creatinine: 0.8 – 2.8 gm/day; Reference Ranges are not available for random urine specimens. **Comments:** Urine sodium levels are appropriate in patients with volume depletion, with acute oliguria and with decreased plasma sodium. Urine potassium levels are needed in work-up of hyperkalemia of unknown etiology; possible Conn's syndrome, adrenal hyperplasia, Bartters syndrome, renal tubular acidosis, Fanconi's syndrome. Urine Chloride and Urine CO₂ levels are not available. **Use:** To monitor kidney function, fluid and electrolyte balance, water balance, acid-base balance; evaluate electrolyte composition of urine; used in work-ups with correlation with renin and aldosterone assays.

URINE GLUCOSE

SYNONYMS Random Urine Glucose; OB Urine Screen

ADMINISTRATION Department: Urinalysis **Request Method:** CHCS order or Miscellaneous SF 557
Availability: Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 2 to 4 hours **Special Instructions:** N/A **Cost:** \$ 5.60

SPECIMEN Type: Urine **Volume:** 15 mL **Minimum Volume:** 1 mL **Container:** Sterile urine collection cup **Collection:** First morning urine is preferred. Random specimens are acceptable. **Storage:** Store refrigerated. If unable to bring to laboratory within 1/2 hour after collection, store refrigerated for no longer than 2 hours before bringing to laboratory. **Patient Preparation:** Catch midstream urine in specimen cup. Females should clean labia from front to back with soap. Urinate into toilet and catch urine in midstream in the specimen cup. **Causes for Rejection:** Specimen older than 2 hours; sample volume quantity not sufficient; improperly labeled or unlabeled specimen.

INTERPRETATION Normal Range: Negative **Comments:** Ordered by HCP as part of prenatal health screen. Back up clinitest will be ordered by the lab to verify positive glucose results (these tests are not ordered by the physician). **Use:** Screen for diabetes during pregnancy.

URINE HUMAN CHORIONIC GONADOTROPIN, (QUALITATIVE)

SYNONYMS Urine HCG: HCG, Qualitative, Urine; Pregnancy Test, Urine

ADMINISTRATION Department: Urinalysis **Request Method** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 4 to 24 hours **Special Instructions:** First morning voided urine is the specimen of choice for urine HCG. **Cost:** \$ 14.00

SPECIMEN Type: Urine **Volume:** 3 mL **Minimum Volume:** 1 mL **Container:** Plastic specimen container **Collection:** Random urine **Storage:** N/A **Patient Preparation:** N/A **Causes for Rejection:** Urine specimen grossly contaminated with blood or bacteria; improperly labeled specimen.

INTERPRETATION Normal Range: Normal males and nonpregnant females: Negative; Normal pregnant females: Positive **Comments:** HCG can be detected in the serum 8 - 12 days after conception. **Use:** Diagnosis of pregnancy, screen for women at risk of being pregnant prior to x-ray, sterilization, menstrual regulation and curettage procedures.

URINE PROTEIN

SYNONYMS Random Urine Protein; OB Urine Screen

ADMINISTRATION Department: Urinalysis **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hours; Routine: 2 to 4 hours **Special Instructions:** N/A **Cost:** \$ 5.60

SPECIMEN Type: Urine **Volume:** 15 mL **Minimum Volume:** 1 mL **Container:** Sterile urine collection cup **Collection:** First morning urine is preferred. Random specimens are acceptable. **Storage:** Store refrigerated. If unable to bring to laboratory within 1/2 hour after collection, store refrigerated for no longer than 2 hours before bringing to laboratory. **Patient Preparation:** Catch midstream urine in specimen cup. Females should clean labia from front to back with soap. Urinate into toilet and catch urine in midstream in the specimen cup. **Causes for Rejection:** Specimen older than 2 hours; sample volume quantity not sufficient; improperly labeled or unlabeled specimen.

INTERPRETATION Normal Range: Negative **Comments:** Ordered by HCP as part of prenatal health screen. Back up Sulfosalicylic acid will be ordered by the lab to verify positive protein results (these tests are not ordered by the physician). **Use:** Screen for preeclampsia during pregnancy.

Urobilinogen (N) *shipped to outside facility for testing*

VAGINAL (and Perianal) CULTURE Group B Strep Screen

SYNONYMS Streptococcal Group B; perianal cultures for Group B Strep, Cervical culture for Streptococcal

TEST INCLUDES 2 cultures one for cervix and one from perianal.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** 24 to 48 hours **Special Instructions:** N/A **Cost:** \$ 18.20

SPECIMEN Type: Cervical and perianal specimens, 2 cultures, order as 2 separate tests. **Volume:** Ample specimen on swab **Minimum Volume:** Same **Container:** Aerobic Culturettes **Collection:** See Genital routine culture for collection methods for vaginal or cervical collection. **Storage:** Do not delay over 4 hours. **Patient Preparation:** No douche 72 hours prior to collection. (If Group B present, douching reduces # for isolates or even no growth). **Causes for Rejection:** Untimely delivery to laboratory; improperly labeled specimen.

INTERPRETATION Normal Range: No Group B Streptococcus sp. isolated **Comments:** Group B Streptococcus (GBS) are common normal inhabitants of the human genital and intestinal tract. They are recovered from 15 - 30% of women. The most common significant GBS infection occurs in newborn infants or shortly after birth. Those infants whose mothers have not produced antibody to *Streptococcus agalactiae* are more at risk. At the present time routine screening for GBS is not recommended. Although, in certain high risk clinical situations a culture may be advisable. It has been proven that attempts to eliminate *S. agalactiae* by screening all women for the organism and then administering penicillin to positive mothers have not been successful. If patient is a carrier for Group B Strep, culturing the perianal area in addition to the cervix, can increase isolation by 25%. This is why the test, a culture set of 2 sites (cervix and perianal area), is required. **Use:** Isolate and identify Group B Streptococcus sp.

VALIUM PANEL QUANTITATIVE (N) *shipped to outside facility for testing*

VALPROIC ACID

SYNONYMS Depakene; Sodium Valproate

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 - 24 hours **Special Instructions:** Suggested drawing time - Trough: Just prior to dose; Peak: 1 to 3 hours after dose. **Cost:** \$ 29.40

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube **Collection:** Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A **Causes for Rejection:** Improperly labeled specimen.

INTERPRETATION Normal Range: 50 - 100 mg/mL Toxic > 200 mg/mL **Comments:** It is the drug of choice for myoclonic epilepsy. Phenytoin, Phenobarbital, primidone, and carbamazepine decreases the half-life of valproic acid. **Use:** This drug is used in the management of grand mal epilepsy and petit mal epilepsy in pediatrics, often with other agents. Monitor drug levels in the treatment and control of seizures.

VANCOMYCIN

SYNONYMS Vanocin

ADMINISTRATION Department: Special Chemistry **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** STAT: 1 hour; ASAP: 2 hour; Routine: 4 - 24 hours **Special Instructions:** Suggested sampling time - Trough: Just prior to dose; Peak: 30 minutes after IV infusion is completed. **Cost:** \$ 29.40

SPECIMEN Type: Blood **Volume:** 7 mL **Minimum Volume:** 3 mL **Container:** Red top tube
Collection: Routine venipuncture **Storage:** Separate and refrigerate serum **Patient Preparation:** N/A
Causes for Rejection: Improperly labeled specimen.

INTERPRETATION Normal Range: Trough: 5 - 10 ug/mL; Peak: 30 - 40 ug/mL Peak Toxic > 60 ug/mL **Comments:** Vancomycin is a bactericidal antibiotic. It has regained clinical popularity for the treatment of methicillin resistant *Staphylococcus aureus* and antibiotic associated diarrhea due to *Clostridium difficile*. **Use:** Monitor therapeutic drug level.

VANILLYL MANDELIC ACID (N) *shipped to outside facility for testing*

VARICELLA IGG ANTIBODY

SYNONYMS Varicella-zoster antibody

ADMINISTRATION Department: Microbiology/Serology **Request Method:** CHCS order or Miscellaneous SF 553 if computer is down **Availability:** Daily **Turnaround Time:** Presently testing is done bi-weekly depending upon volume. **Cost:** \$2.80

SPECIMEN Type: Serum **Volume:** 3 mL serum **Minimum Volume:** 3 mL serum **Container:** Red top, black top-ring or yellow top-ring **Collection:** N/A **Storage:** Up to 5 days at 2 – 8 degrees C or greater than 5 days store at –20 degrees C. **Causes for Rejection:** Plasma, lipemic serum

INTERPRETATION Normal Range: Positive **Comments:** Testing is for IGG antibodies which indicate prior exposure and possible immunity to Varicella Zoster. **Limitations:** Does not exclude ongoing infection. To diagnose recent infection presence of IGM antibodies on acute and convalescent specimens are indicated. A positive test result in immunocompromised patients receiving prophylactic treatment with Zoster immune serum globulin or Zoster immune plasma may not be indicative of prior infection with Varicella Zoster Virus. The correlation of negative test results determined with this test as they relate to protection from Varicella infection has not yet been definitely established.

VASOACTIVE INTESTINAL POLYPEPTIDE (N) *shipped to outside facility for testing*

VDRL CSF (B) *shipped to outside facility for testing*

VERAPAMIL PANEL (N) *shipped to outside facility for testing*

VIRAL CULTURE(NON-HERPES) (BAMC) *shipped to outside facility for testing*

VISCOSITY, SERUM (N) *shipped to outside facility for testing*

VITAMIN A (N) *shipped to outside facility for testing*

VITAMIN B12/FOLATE PANEL (BAMC) *shipped to outside facility for testing*

VITAMIN B6 (N) *shipped to outside facility for testing*

VITAMIN D,25-HYDROXY (N) *shipped to outside facility for testing*

VITAMIN D;1,25-DIHYDROXY (N) *shipped to outside facility for testing*

VITAMIN E (N) *shipped to outside facility for testing*

VITAMIN K1 (N) *shipped to outside facility for testing*

WESTERGREN SEDIMENTATION RATE

SYNONYMS Westergren ESR, Sedimentation Rate (Seditainer-Westergren), ESR

ADMINISTRATION Department: Hematology **Request Method:** CHCS order or Miscellaneous SF 557 **Availability:** Daily **Turnaround Time:** 2 hours **Special Instructions:** Specimen must be received within 4 hours after collection. **Cost:** \$ 7.00

SPECIMEN Type: Blood **Volume:** 5.0 mL **Minimum Volume:** 5.0 mL **Container:** Black CIT.Na Seditainer tube **Collection:** Routine venipuncture **Storage:** Room temperature. Specimen must be mixed before the test is performed. **Patient Preparation:** N/A **Causes for Rejection:** Quantity not sufficient; clotted specimen; hemolyzed specimen; improperly labeled specimen; untimely delivery of specimen to the laboratory, greater than 4 hours after collection.

INTERPRETATION Normal Range: Male, below age 50: 0 - 15 mm/hr; over age 50: 0 - 20 mm/hr; Female below 50: 0 - 20 mm/hr, over age 50: 0 - 30 mm/hr **Comments:** N/A. **Use:** Nonspecific activity of infections, inflammatory states, autoimmune disorders and plasma cell dyscrasias.

WESTERN BLOT HTLV I/II (N) shipped to outside facility for testing

WET PREP

SYNONYMS Trichomonas; Cervical or Vaginal Wet Prep

TEST INCLUDES Can be ordered with KOH prep or separately.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 557 if computer down **Availability:** Daily **Turnaround Time:** STAT 1 hour **Special Instructions:** Do not let patient douche 3 days prior to collection. **Cost:** \$ 9.80

SPECIMEN Type: Vaginal cervical swab **Volume:** Adequate specimen **Minimum Volume:** Same **Container:** Swab in 0.5 mL sterile saline in a red top blood collection tube; slide, saline added, coverslipped, in slide container, slide and container labeled with patients name, patients identification number and test type required **Collection:** Specimen collected using a speculum without lubricant. The mucosa of the posterior vagina may be swabbed. The swab is placed in a Culturette holder. Always crush media compartment. **Storage:** Do not refrigerate. Transport to laboratory immediately because Trichomonas become immotile if exposed to room temperature too long **Patient Preparation:** See collection **Causes for Rejection:** Untimely delivery of specimen to the laboratory, greater than 15 minutes; dried specimen; uncrushed media compartment; improperly labeled specimen.

INTERPRETATION Normal Range: No yeast or no clue cells. No Trichomonas species seen **Comments:** One negative result does not rule out the possibility of Trichomonas vaginalis infection. The wet prep is negative in 30-50 % of women with Trichomoniasis. A vaginal pH above 5 is suggestive of Trichomonas. **Use:** Establish the presence of fungal elements, Trichomonas and/or clue tests.

WOUND CULTURE

SYNONYMS Aerobic Culture, Abscess, Abscess Aerobic culture, deep wound, soft tissue aspirate, bone, Ulcers, exudate site wound.

TEST INCLUDES Gram stains (see gram stain) and **Anaerobic cultures** (see anaerobic culture) on wounds **must be ordered separately** from the wound culture. An anaerobic specimen or gram stain, if ordered, must be submitted on their own separate culture swab. For example, if a wound culture, anaerobic culture, and gram stain were ordered, then 3 separate specimens must be submitted to the lab for testing.

ADMINISTRATION Department: Microbiology **Request Method:** CHCS order or Miscellaneous SF 553 if computer down **Availability:** Daily **Turnaround Time:** 3 to 5 days with no growth aerobically, aerobically with growth up to 4 days. **Special Instructions:** Specimen for anaerobic culture should be grown separately by an anaerobic culture. On the lab slip annotate the specific site of the specimen, age of patient, antimicrobial therapy, diagnosis, and time of collection. **Cost:** \$ 18.20

SPECIMEN Type: Fluid, pus or 1 mL aspirates or other material properly obtained from an abscess for optimal yield **Volume:** Optimal yield on swab **Minimum Volume:** Aspirate 0.5 mL (can see a sterile saline wash **Container:** Anaerobic and aerobic Culturettes. If collected in a syringe, specimen should be re-capped with plastic cap, but without needle or air space. **Collection:** Specimens are to be collected from a prepared site using sterile technique. Contamination with normal flora from skin, rectum, vaginal tract, or other body surfaces must be avoided. **Storage:** Bring to laboratory as soon as possible. **Patient Preparation:** Aseptic preparation of the aspiration site. The adjacent areas must be prepared to eliminate isolation of possible contaminating aerobes or anaerobes which colonize the skin surface. **Causes for Rejection:** Specimens which have been refrigerated or have an excessive delay in laboratory submission; improperly labeled specimen.

INTERPRETATION Normal Range: No growth of aerobic bacteria **Comments:** In open wounds, anaerobic organisms may play an etiological role whereas aerobes may represent superficial contamination. **Use:** Isolate and identify aerobic organisms from various wound sites.

ZINC (BAMC) *shipped to outside facility for testing*

ZINC PROTOPORPHYRIN (B) *shipped to outside facility for testing*

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 CT Immuno Panel (B) *shipped to outside facility for testing*
 Cul-de-Sac Fluid Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Culdacentesis Body Cavity Fluid *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Culture, Bone Marrow *see* **Bone Marrow Study** in Alphabetical Order Test Listing
 Culture, Urine *see* **Urine Culture, Clean Catch** in Alphabetical Order Test Listing
 Cyclosporine Serum (N) *shipped to outside facility for testing*
 Cyclosporine, Whole Blood (N) *shipped to outside facility for testing*
 Cyst Fluid Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Cystic Fibrosis Screen *see* **Sweat Chloride** in Alphabetical Order Test Listing
 Cystic Fibrosis, DNA Probe (N) *shipped to outside facility for testing*
 Cystine Urine (N) *shipped to outside facility for testing*
Cytology, GYN in Alphabetical Order Test Listing
Cytology, Non-GYN in Alphabetical Order Test Listing
 Cytomegalovirus Culture (Q) *shipped to outside facility for testing*
 Dacryocystitis (lacrimal sac) *see* **Eye Culture** in Alphabetical Order Test Listing
 DAT *see* **Direct Antiglobulin Test** in Alphabetical Order Test Listing
 Datril *see* **Acetaminophen** in Alphabetical Order Test Listing
 Deep Wound Culture *see* **Wound Culture** in Alphabetical Order Test Listing
 Delta Aminolevulinic Acid (N) *shipped to outside facility for testing*
 Delta Bilirubin *see* **Bilirubin Fractionation Panel** in Alphabetical Order Test Listing
 Depakene *see* **Valproic Acid** in Alphabetical Order Test Listing
 Dexamethasone Suppression *see* **Cortisol Suppression Test** in Alphabetical Order Test Listing
 DHEAS (B) *shipped to outside facility for testing*
 Diff. Count *see* **Manual Differential** in Alphabetical Order Test Listing
 Differential Leukocyte Count *see* **CBC/Manual Differential** or **Manual Differential** in Alphabetical Order Test Listing
 Differential Smear, Peripheral Blood *see* **CBC/Manual Differential** or **Manual Differential** in Alphabetical Order Test Listing
 Differential WBC *see* **Manual Differential** in Alphabetical Order Test Listing
 Dig *see* **Digoxin** in Alphabetical Order Test Listing
Digoxin in Alphabetical Order Test Listing
 Dilantin *see* **Phenytoin** in Alphabetical Order Test Listing
Direct Antiglobulin Test in Alphabetical Order Test Listing
 Direct Bilirubin *see* **Bilirubin Fractionation Panel** in Alphabetical Order Test Listing
 Direct Coombs *see* **Direct Antiglobulin Test** in Alphabetical Order Test Listing
 Direct Coomb's *see* **Direct Antiglobulin Test** in Alphabetical Order Test Listing
 DNA Histogram, Blood / Bone Marrow (N) *shipped to outside facility for testing*
 Doxepin Panel (N) *shipped to outside facility for testing*
 Drug Screen, Urine *see* **Urine Drug Screen (Triage) Panel** in Alphabetical Order Test Listing
 DX Panel-CLL, HCL, SLL (N) *shipped to outside facility for testing*
 D-Xylose, 5 Hour Urine (N) *shipped to outside facility for testing*

Ear Culture in Alphabetical Order Test Listing

Early B.Burgdorferi Antibody Panel (N) *shipped to outside facility for testing*

Ehrlichia Chaffeensis Panel (N) *shipped to outside facility for testing*

Electrolytes Panel in Alphabetical Order Test Listing

Electrolytes *see* **Electrolytes Panel** in Alphabetical Order Test Listing

Electrolytes, Stool (Brooks) *shipped to outside facility for testing*

Endocervical GC Culture *see* **GC Culture** in Alphabetical Order Test Listing

Endophthalmitis (vitreous fluid) *see* **Eye Culture** in Alphabetical Order Test Listing

Enterobiasis Test *see* **Pinworm Preparation** in Alphabetical Order Test Listing

Enterovirus Detect.RT-PCR (EF) *shipped to outside facility for testing*

EOS Count *see* **Eosinophil Count** in Alphabetical Order Test Listing

Eosinophil Count in Alphabetical Order Test Listing

Eosinophil, Nasal Smear in Alphabetical Order Test Listing

Epiglottis *see* **Throat Culture, (or Nasal Pharyngeal) Routine** in Alphabetical Order Test Listing

Epstein Bar Virus Panel (A) *shipped to outside facility for testing*

Erythrocyte Sedimentation Rate in Alphabetical Order Test Listing

Erythropoietin (N) *shipped to outside facility for testing*

Eskalith *see* **Lithium** in Alphabetical Order Test Listing

Esophageal Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Esophageal Lavage *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

ESR *see* **Erythrocyte Sedimentation Rate** or **Westergren Sedimentation Rate** in Alphabetical Order Test Listing

Estradiol, Serum (B) *shipped to outside facility for testing*

Estrogen/Progesterone Receptors (W) *shipped to outside facility for testing*

Ethanol/Alcohol in Alphabetical Order Test Listing

Ethosuximide (N) *shipped to outside facility for testing*

Ethyl Alcohol, Blood *see* **Ethanol/Alcohol** in Alphabetical Order Test Listing

Ethylene Glycol (SK) *shipped to outside facility for testing*

ETOH *see* **Ethanol/Alcohol** in Alphabetical Order Test Listing

External Slide Review *see* **Slide Review** in Alphabetical Order Test Listing

Exudate Site Wound Culture *see* **Wound Culture** in Alphabetical Order Test Listing

Eye Culture in Alphabetical Order Test Listing

Eye Smear for Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Eye Smear for Eosinophils *see* **Eosinophil, Nasal Smear** in Alphabetical Order Test Listing

Factor I *see* **Fibrinogen** in Alphabetical Order Test Listing

Factor VIII Panel (N) *shipped to outside facility for testing*

Factor XI (N) *shipped to outside facility for testing*

Factor XIII (N) *shipped to outside facility for testing shipped to outside facility for testing*

Fasting Glucose *see* **Glucose (Serum/Plasma)** in Alphabetical Order Test Listing

FBP *see* **Fibrin Degradation Products** in Alphabetical Order Test Listing

FDP *see* **Fibrin Degradation Products** in Alphabetical Order Test Listing

Fe *see* **Iron Serum/Plasma** in Alphabetical Order Test Listing

Fe++ *see* **Iron Serum/Plasma** in Alphabetical Order Test Listing

Fecal Culture *see* **Stool/Anal Culture** in Alphabetical Order Test Listing

Fecal Fat (Qualitative) (Q) *shipped to outside facility for testing*

Fecal Fat Quantative (BAMC) *shipped to outside facility for testing*

Fecal Leukocytes in Alphabetical Order Test Listing

Fecal Smear for Eosinophils *see* **Eosinophil, Nasal Smear** in Alphabetical Order Test Listing

Fecal WBC *see* **Fecal Leukocytes** in Alphabetical Order Test Listing

Felbatol (N) *shipped to outside facility for testing*
Fern Test in Alphabetical Order Test Listing
Ferritin in Alphabetical Order Test Listing
 Fetal Bleed Screen *see Fetal Screen* in Alphabetical Order Test Listing
 Fetal Bleed Test *see Fetal Hemoglobin Detection* in Alphabetical Order Test Listing
Fetal Hemoglobin Detection in Alphabetical Order Test Listing
 Fetal Lung Maturity *see Amniotic Fluid Analysis (N) shipped to outside facility for testing*
Fetal Screen in Alphabetical Order Test Listing
FFP 1-4 units (Must request number in CHCS) in Alphabetical Order Test Listing
 Fibrin Breakdown Products *see Fibrin Degradation Products* in Alphabetical Order Test Listing
Fibrin Degradation Products in Alphabetical Order Test Listing
 Fibrin Split Products *see Fibrin Degradation Products* in Alphabetical Order Test Listing
Fibrinogen in Alphabetical Order Test Listing
 Fibrinogen Level *see Fibrinogen* in Alphabetical Order Test Listing
 Fine needle aspiration cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 FK506 (Tacrolimus) (N) *shipped to outside facility for testing*
 Flecainide (N) *shipped to outside facility for testing*
 Fluid Culture *see Biopsy (Tissue) Culture or Body Fluid Culture* in Alphabetical Order Test Listing
 Fluid Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Fluid *see Body Fluid Culture (Not blood or CSF Cultures)* in Alphabetical Order Test Listing
 Fluorescent Trep. AB-ABS (N) or (B) *shipped to outside facility for testing*
 Fluoxetine Panel (N) *shipped to outside facility for testing*
 FNA *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Folate, RBC (N) *shipped to outside facility for testing*
Follicle Stimulating Hormone in Alphabetical Order Test Listing
 Follitropin *see Follicle Stimulating Hormone* in Alphabetical Order Test Listing
 Fragile X (Alfigen) *shipped to outside facility for testing*
 Free PSA Panel (A) *shipped to outside facility for testing*
Free T3 in Alphabetical Order Test Listing
Free T4 in Alphabetical Order Test Listing
 Free T4, Serum *see Free T4* in Alphabetical Order Test Listing
 Free Thyroxine *see Free T4* in Alphabetical Order Test Listing
 Fresh Frozen Plasma *see FFP 1-4 units (Must request number in CHCS)* in Alphabetical Order Test Listing
 Frozen Section *see Histopathology* in Alphabetical Order Test Listing
 FSH *see Follicle Stimulating Hormone* in Alphabetical Order Test Listing
 FSP *see Fibrin Degradation Products* in Alphabetical Order Test Listing
 Fungus Antibody Panel, Serum (N) *shipped to outside facility for testing*
 Fungus Culture (S) *shipped to outside facility for testing*
 G-6-PDH Quantitative (B) *shipped to outside facility for testing*
 Gamma Glutamyl Transferase *see GGT* in Alphabetical Order Test Listing
 Gamma Glutamyl Transpeptidase *see GGT* in Alphabetical Order Test Listing
 Garamycin *see Gentamicin* in Alphabetical Order Test Listing
 Gases, Arterial *see Blood Gas Profile* in Alphabetical Order Test Listing
 Gastric Blood *see Occult Blood, Gastric and pH* in Alphabetical Order Test Listing
 Gastric Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Gastric Lavage *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Gastric pH *see Occult Blood, Gastric and pH* in Alphabetical Order Test Listing
 Gastric Washing Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Gastrin (BAMC) *shipped to outside facility for testing*

Gastrocult ® *see* **Occult Blood, Gastric and pH** in Alphabetical Order Test Listing

GC Culture in Alphabetical Order Test Listing

GC, GEN-Probe *see* **GEN-Probe (Chlamydia, N. Gonorrhea)** in Alphabetical Order Test Listing

Genital Cytology *see* **Cytology, GYN** in Alphabetical Order Test Listing

Genital, Routine Bacterial Culture (Not for GC or Group B Strep) in Alphabetical Order Test Listing

GEN-Probe (Chlamydia, N. Gonorrhea) in Alphabetical Order Test Listing

Gent *see* **Gentamicin** in Alphabetical Order Test Listing

Gentamicin in Alphabetical Order Test Listing

German Measles Test *see* **Rubscan (Rubella) (Qualitative)** in Alphabetical Order Test Listing

GGT in Alphabetical Order Test Listing

GGTP *see* **GGT** in Alphabetical Order Test Listing

Giardia Antigen, EIA in Alphabetical Order Test Listing

Glucose (Serum/Plasma) in Alphabetical Order Test Listing

Glucose Tolerance Testing in Alphabetical Order Test Listing

Glucose (Urine) in Alphabetical Order Test Listing

Glucose Urine 24 Hour Panel in Alphabetical Order Test Listing

Glutamic Oxaloacetic Transaminase *see* **AST** in Alphabetical Order Test Listing

Glutamic Pyruvate Transaminase *see* **ALT** in Alphabetical Order Test Listing

Glycated Hemoglobin Panel in Alphabetical Order Test Listing

Gonorrhea Culture *see* **GC Culture** in Alphabetical Order Test Listing

GOT *see* **AST** in Alphabetical Order Test Listing

GPT *see* **ALT** in Alphabetical Order Test Listing

Gram Stain, General in Alphabetical Order Test Listing

Gross and Microscopic Pathology *see* **Histopathology**, (includes Breast Biopsy and Frozen Section) in Alphabetical Order Test Listing

Group A Strep Screen (Throat) Culture in Alphabetical Order Test Listing

GT *see* **GGT** in Alphabetical Order Test Listing

GTP *see* **GGT** in Alphabetical Order Test Listing

GTT *see* **Glucose Tolerance Testing** in Alphabetical Order Test Listing

Gyn Cytology *see* **Cytology, GYN** in Alphabetical Order Test Listing

GYN Cytology *see* **Cytology, GYN** in Alphabetical Order Test Listing

H. Influenza Type B Vaccine Response (N) *shipped to outside facility for testing*

H. pylori test *see* **Helicobacter Pylori (Qual)** in Alphabetical Order Test Listing

HAM'S Test (N) *shipped to outside facility for testing*

Haptoglobin (B) *shipped to outside facility for testing*

HAVAB IgM Hepatitis A Virus Antibody IgM (A) *shipped to outside facility for testing*

Hb *see* **Hemoglobin** in Alphabetical Order Test Listing

HBcAB IgM Hepatitis B Core Antibody IgM (A) *shipped to outside facility for testing*

HBsAg confirm (N) *shipped to outside facility for testing*

HBsAG *see* **Hepatitis B Surface Antigen** in Alphabetical Order Test Listing

HCG, Qualitative, Urine *see* **Urine Human Chorionic Gonadotropin, (Qualitative)** in Alphabetical Order Test Listing

HCT *see* **Hematocrit, Automated or Hematocrit, Manual** in Alphabetical Order Test Listing

HCV Ab (A) *shipped to outside facility for testing*

HCV RNA PCR, Qualitative (A) *shipped to outside facility for testing*

HCV RNA PCR, Quantitative (A) *shipped to outside facility for testing*

HDL *see* **Lipid Panel w/ HDL** in Alphabetical Order Test Listing

Heavy Metal Screen (B) *shipped to outside facility for testing*

Helicobacter Pylori (Qual) in Alphabetical Order Test Listing

Hematocrit, Automated in Alphabetical Order Test Listing
Hematocrit, Manual in Alphabetical Order Test Listing
Hemocult *see* **Occult Blood, Stool** in Alphabetical Order Test Listing
Hemoglobin in Alphabetical Order Test Listing
Hemoglobin Electrophoresis (B) *shipped to outside facility for testing*
Hemoglobin, A1C, GHB *see* **Glycated Hemoglobin Panel** in Alphabetical Order Test Listing
Hemoglobin, Glycosylated *see* **Glycated Hemoglobin Panel** in Alphabetical Order Test Listing
Hemosiderin, Qualitative (N) *shipped to outside facility for testing*
Hep Panel *see* **Hepatic (Chem) Panel** in Alphabetical Order Test Listing
Heparin, Unfractionated (N) *shipped to outside facility for testing*
Hepatic (Chem) Panel in Alphabetical Order Test Listing
Hepatitis A Virus Antibody IgM (A) *shipped to outside facility for testing*
Hepatitis B Core Antibody IgM in Alphabetical Order Test Listing
Hepatitis B Core M *see* **Hepatitis B Core Antibody IgM (A)** *shipped to outside facility for testing*
Hepatitis B Surface Antibody in Alphabetical Order Test Listing
Hepatitis B Surface Antigen in Alphabetical Order Test Listing
Hepatitis B Virus DNA Quantitative (N) *shipped to outside facility for testing*
Hepatitis Be Antigen & Antibody Panel (BAMC) *shipped to outside facility for testing*
Hepatitis Delta Antibody (N) *shipped to outside facility for testing*
Herpes Culture (B) *shipped to outside facility for testing*
Herpes I/II Antibody Panel (A) *shipped to outside facility for testing*
Herpes Simplex IgG (BAMC) *shipped to outside facility for testing*
Hetero Mononucleosis (Mono) in Alphabetical Order Test Listing
Hgb A1C *see* **Glycated Hemoglobin Panel** in Alphabetical Order Test Listing
Hgb *see* **Hemoglobin** in Alphabetical Order Test Listing
HgbS Screening Test *see* **Sickle Cell Screen** in Alphabetical Order Test Listing
High Density Lipoprotein *see* **Lipid Panel w/ HDL** in Alphabetical Order Test Listing
Histopathology, (includes Breast Biopsy and Frozen Section) in Alphabetical Order Test Listing
HIV (VIROMED) *shipped to outside facility for testing*
HLA Antigen B5 (N) *shipped to outside facility for testing*
HLA-A,B Locus Typing (N) *shipped to outside facility for testing*
HLA-B27(N) *shipped to outside facility for testing*
Homocysteine (N) *shipped to outside facility for testing*
HTLV-1 (N) *shipped to outside facility for testing*
Human Chorionic Gonadotropin (Qualitative) *see* **BHCG, Qualitative Serum** in Alphabetical Order Test Listing
Human Chorionic Gonadotropin (Quantitative) *see* **BHCG, Quantitative** in Alphabetical Order Test Listing
Human Chorionic Gonadotropin (Tumor Marker) *see* **BHCG Tumor Marker** in Alphabetical Order Test Listing
Human Growth Hormone (B) *shipped to outside facility for testing*
Hydrocele Fluid Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
Hydrocortisone *see* **Cortisol** in Alphabetical Order Test Listing
Hydrogen Ion Concentration *see* **pH Testing** in Alphabetical Order Test Listing
Hydroxyproline, Total 24 Hour Urine (N) *shipped to outside facility for testing*
ICSH *see* **Leuteinizing Hormone** in Alphabetical Order Test Listing
IgG Subclasses Panel (N) *shipped to outside facility for testing*
Ileol Conduit *see* **Urine Culture, Catheter** in Alphabetical Order Test Listing
Immediate Spin Crossmatch in Alphabetical Order Test Listing
Immunoglobulins Panel (B) *shipped to outside facility for testing*
Indirect Bilirubin *see* **Bilirubin Fractionation Panel** in Alphabetical Order Test Listing
Indirect coombs *see* **Antibody Screen (Indirect Coombs)** in Alphabetical Order Test Listing

Infectious Mononucleosis Screening Test *see* **Hetero Mononucleosis (Mono)** in Alphabetical Order Test Listing

Infertility Study *see* **Semen Analysis** in Alphabetical Order Test Listing

Influenza Antibody (Types A&B) (N) *shipped to outside facility for testing*

Inorganic Phosphate *see* **Phosphorous, Serum** in Alphabetical Order Test Listing

Insect Venom Panel (N) *shipped to outside facility for testing*

Insulin (B) *shipped to outside facility for testing*

Insulin Antibodies (N) *shipped to outside facility for testing*

Insulin Growth Factor (B) *shipped to outside facility for testing*

Intravascular devices culture – contact microbiology division @ 596-9866

Intact PTH (B) *shipped to outside facility for testing*

Interstitial Cell Stimulating Hormone *see* **Leuteinizing Hormone** in Alphabetical Order Test Listing

Intraoperative Consultation *see* **Histopathology** in Alphabetical Order Test Listing

Intrinsic Factor Block Antibody (N) *shipped to outside facility for testing*

Ionized Calcium (B) *shipped to outside facility for testing*

Iron Panel in Alphabetical Order Test Listing

Iron Serum/Plasma in Alphabetical Order Test Listing

Iron Stain, Bone Marrow *see* **Bone Marrow Study** in Alphabetical Order Test Listing

IS Crossmatch *see* **Immediate Spin Crossmatch** in Alphabetical Order Test Listing

IS Xmatch *see* **Immediate Spin Crossmatch** in Alphabetical Order Test Listing

Joint Fluid Cell Count *see* **Cell Count /Differential Body Fluid or Cell Count, Differential Synovial Fluid** in Alphabetical Order Test Listing

Joint Fluid Culture *see* **Body Fluid Culture (Not blood or CSF Cultures)** in Alphabetical Order Test Listing

Joint Fluid GC Culture *see* **GC Culture** in Alphabetical Order Test Listing

Joint Fluid *see* **Synovial Fluid Chemistry Panel** in Alphabetical Order Test Listing

K *see* **Potassium** in Alphabetical Order Test Listing

K, Urine *see* **Potassium 24 HR Urine Panel** in Alphabetical Order Test Listing

K+ *see* **Potassium** in Alphabetical Order Test Listing

Keratitis (cornea) *see* **Eye Culture** in Alphabetical Order Test Listing

Ketone, serum *see* **Serum Ketone** in Alphabetical Order Test Listing

Kidney Biopsy *see* **Histopathology, (includes Breast Biopsy and Frozen Section)** in Alphabetical Order Test Listing

Kidney Stone Analysis (AFIP) *shipped to outside facility for testing*

Kleihauer Betke *see* **Fetal Hemoglobin Detection** in Alphabetical Order Test Listing

KOH Preparation in Alphabetical Order Test Listing

Lactate *see* **Lactic Acid** in Alphabetical Order Test Listing

Lactic Acid in Alphabetical Order Test Listing

Lactic Acid Dehydrogenase *see* **LDH** in Alphabetical Order Test Listing

Lactic Dehydrogenase *see* **LDH** in Alphabetical Order Test Listing

Lactose Tolerance Test in Alphabetical Order Test Listing

Lanoxin *see* **Digoxin** in Alphabetical Order Test Listing

Larynx *see* **Throat Culture, (or Nasal Pharyngeal) Routine** in Alphabetical Order Test Listing

Latex, Hevea Braziliensis (N) *shipped to outside facility for testing*

LD *see* **LDH** in Alphabetical Order Test Listing

LDH in Alphabetical Order Test Listing

LDH Isoenzymes Panel (N) *shipped to outside facility for testing*

LDL *see* **Lipid Panel w/ HDL** in Alphabetical Order Test Listing

Lead (B) *shipped to outside facility for testing*

Lecithin/Sphingomyelin (L/S) Ratio (N) *shipped to outside facility for testing*

Legal Blood Alcohol *see* **Ethanol/Alcohol** in Alphabetical Order Test Listing

Legionella Antibody, IFA (N) *shipped to outside facility for testing*

Legionella Antigen, Urine RIA (N) *shipped to outside facility for testing*
 Legionella IgM/Multiple Species (N) *shipped to outside facility for testing*
 Legionella Pneumophila DFA (N) *shipped to outside facility for testing*
 Leptospira Antibody (N) *shipped to outside facility for testing*
 Leucine Aminopeptidase (N) *shipped to outside facility for testing*
 Leukocyte Alkaline Phosphatase (N) *shipped to outside facility for testing*
Leuteinizing Hormone in Alphabetical Order Test Listing
 LFTs *see Hepatic (Chem) Panel* in Alphabetical Order Test Listing
 LH *see Leuteinizing Hormone* in Alphabetical Order Test Listing
 Li, Blood *see Lithium* in Alphabetical Order Test Listing
 Li+ *see Lithium* in Alphabetical Order Test Listing
 Lidocaine (N) *shipped to outside facility for testing*
Lipase in Alphabetical Order Test Listing
 Lipase, Serum *see Lipase* in Alphabetical Order Test Listing
Lipid Panel w/ HDL in Alphabetical Order Test Listing
 Liquiprin *see Acetaminophen* in Alphabetical Order Test Listing
Lithium in Alphabetical Order Test Listing
 Liver Panel *see Hepatic (Chem) Panel* in Alphabetical Order Test Listing
 Liver Test *see Hepatic (Chem) Panel* in Alphabetical Order Test Listing
 Low Density Lipoprotein *see Lipid Panel w/ HDL* in Alphabetical Order Test Listing
 Lower Respiratory Tract Culture *see Sputum Culture* in Alphabetical Order Test Listing
 Lumbar Puncture *see Cell Count, Differential Cerebrospinal Fluid Analysis* in Alphabetical Order Test Listing
 Luminal *see Phenobarbital* in Alphabetical Order Test Listing
 Lupus Anticoagulant Panel (N) *shipped to outside facility for testing*
 Lupus Panel (A) *shipped to outside facility for testing*
 Luteotrophin *see Prolactin* in Alphabetical Order Test Listing
 Lyme Elisa (BAMC) *shipped to outside facility for testing*
 Lymph Node Biopsy *see Histopathology, (includes Breast Biopsy and Frozen Section)* in Alphabetical Order Test Listing
 Lymph Node Needle Aspiration Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Lysozyme (N) *shipped to outside facility for testing*
 Lytes, Serum *see Electrolytes Panel* in Alphabetical Order Test Listing
 Lytes, Urine *see Urine Electrolyte Panel* in Alphabetical Order Test Listing
Magnesium Urine 24 Hour Panel in Alphabetical Order Test Listing
Magnesium, Serum in Alphabetical Order Test Listing
 Malarial Parasites *see Malarial Smear* in Alphabetical Order Test Listing
Malarial Smear in Alphabetical Order Test Listing
 Man, Diff *see CBC/Manual Differential* in Alphabetical Order Test Listing
Manual Differential in Alphabetical Order Test Listing
 Maprotiline (N) *shipped to outside facility for testing*
 Marijuana Metabolite Quantitative (N) *shipped to outside facility for testing*
 MBAT *see Ethanol/Alcohol* in Alphabetical Order Test Listing
 Medical Blood Alcohol Test *see Ethanol/Alcohol* in Alphabetical Order Test Listing
 Mercaptopurine (N) *shipped to outside facility for testing*
 Mercury (N) *shipped to outside facility for testing*
 Metabolic Screen Urine (N) *shipped to outside facility for testing*
 Metanephrines, 24 Hour Urine (N) *shipped to outside facility for testing*
 Methotrexate Quantitative (N) *shipped to outside facility for testing*

Methylmalonic Acid (N) *shipped to outside facility for testing*
 Mexiletine (N) *shipped to outside facility for testing*
 Mg, Serum *see* **Magnesium, Serum** in Alphabetical Order Test Listing
 Mg, Urine *see* **Magnesium Urine 24 Hour Panel** in Alphabetical Order Test Listing
 Micro UA *see* **Micro Urinalysis** in Alphabetical Order Test Listing
Micro Urinalysis in Alphabetical Order Test Listing
 Microalbumin Urine 24 Hour Panel (N) *shipped to outside facility for testing*
 Microalbumin, Random Urine (N) *shipped to outside facility for testing*
 Microalbuminuria *see* **Total Protein 24 HR Urine** in Alphabetical Order Test Listing
 Microhematocrit *see* **Hematocrit, Automated or Hematocrit, Manual** in Alphabetical Order Test Listing
 Microscopic Examination of Urine *see* **Micro Urinalysis** in Alphabetical Order Test Listing
 Milk Sugar Tolerance Test *see* **Lactose Tolerance Test** in Alphabetical Order Test Listing
 Mono Test *see* **Hetero Mononucleosis (Mono)** in Alphabetical Order Test Listing
 Monolert *see* **Hetero Mononucleosis (Mono)** in Alphabetical Order Test Listing
 Monospot *see* **Hetero Mononucleosis (Mono)** in Alphabetical Order Test Listing
 Motor/Sens Neuropathy Panel (N) *shipped to outside facility for testing*
 Mumps (B) *shipped to outside facility for testing*
 Muscle Biopsy *see* **Histopathology, (includes Breast Biopsy and Frozen Section)** in Alphabetical Order Test Listing
 Mycoplasma Antibodies Panel (N) *shipped to outside facility for testing*
 Myelin Basic Protein CSF(N) *shipped to outside facility for testing*
 Myoglobin (B)/(N) *shipped to outside facility for testing*
 Na, Serum *see* **Sodium** in Alphabetical Order Test Listing
 Na, Urine *see* **Sodium Urine 24 Hour Panel** in Alphabetical Order Test Listing
 NAPA/Procainamide Panel *shipped to outside facility for testing*
 Nasal pharyngeal *see* **Throat Culture, (or Nasal Pharyngeal) Routine** in Alphabetical Order Test Listing
 Nasal Smear for Eosinophils *see* **Eosinophil, Nasal Smear** in Alphabetical Order Test Listing
 Neck Mass Aspiration *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Necropsy *see* **Autopsy** in Alphabetical Order Test Listing
 Needle Aspiration Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Neisseria Gonorrhea Culture *see* **GC Culture** in Alphabetical Order Test Listing
 Neisseria gonorrhea, GEN-Probe *see* **GEN-Probe (Chlamydia, N. Gonorrhea)** in Alphabetical Order Test Listing
 Neo Bili *see* **Neonatal Bili Panel** in Alphabetical Order Test Listing
Neonatal Bili Panel in Alphabetical Order Test Listing
 Neonatal Bili *see* **Neonatal Bili Panel** in Alphabetical Order Test Listing
 Neurontin (N) *shipped to outside facility for testing*
 Nipple Discharge, Cytology, *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
Nitrazine Test in Alphabetical Order Test Listing
 Norpace (N) *shipped to outside facility for testing*
 Norverapamil (N) *shipped to outside facility for testing*
 OB GTT Panel *see* **Glucose Tolerance Testing** in Alphabetical Order Test Listing
 OB Urine Screen *see* **Urine Glucose** or **Urine Protein** in Alphabetical Order Test Listing
Occult Blood, Stool in Alphabetical Order Test Listing
 Ocular Cytology, *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 OGTT *see* **Glucose Tolerance Testing** in Alphabetical Order Test Listing
 Oligoclonal Bands CSF(N) *shipped to outside facility for testing*
 Oral Cavity, Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Oral Glucose Tolerance Test *see* **Glucose Tolerance Testing** in Alphabetical Order Test Listing

Oral Herpes Smear *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Oral Scraping *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Organ Biopsy *see* **Histopathology, (includes Breast Biopsy and Frozen Section)** in Alphabetical Order Test Listing
 Organic Acids Plasma (N) *shipped to outside facility for testing*
 Organic Acids, Urine Quantitative (N) *shipped to outside facility for testing*
 Oropharyngeal Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Oropharyngeal GC Culture *see* **GC Culture** in Alphabetical Order Test Listing
 Osmol, Serum *see* **Osmolality (Serum)** in Alphabetical Order Test Listing
Osmolality (Serum) in Alphabetical Order Test Listing
Osmolality (Urine) in Alphabetical Order Test Listing
 Otitis externa *see* **Ear Culture** in Alphabetical Order Test Listing
 Otitis media *see* **Ear Culture** in Alphabetical Order Test Listing
 Ova and Parasite Conc. (S) *shipped to outside facility for testing*
 Ovarian Cyst Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Ovarian Cyst Fluid Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Oxalate, 24 Hour Urine Panel (N) *shipped to outside facility for testing*
 Packed Cell Volume *see* **Hematocrit, Automated or Hematocrit, Manual** in Alphabetical Order Test Listing
 Panadol *see* **Acetaminophen** in Alphabetical Order Test Listing
 Pancreatic Cyst Fluid Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Panex *see* **Acetaminophen** in Alphabetical Order Test Listing
 Pap Smear *see* **Cytology, GYN** in Alphabetical Order Test Listing
 Pap Smear, Cervical Smear *see* **Cytology, GYN** in Alphabetical Order Test Listing
 Pap Test *see* **Cytology, GYN** in Alphabetical Order Test Listing
 Paracentesis Body Cavity Fluid *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Paracentesis Fluid Cell Count *see* **Cell Count /Differential Body Fluid** in Alphabetical Order Test Listing
 Paracentesis Fluid *see* **Body Fluid Culture (Not blood or CSF Cultures)** in Alphabetical Order Test Listing
 Parathyroid Hormone Int (B) *shipped to outside facility for testing*
Partial Thromboplastin Time in Alphabetical Order Test Listing
 Parvovirus B-19 Antibody (IgG) (N) *shipped to outside facility for testing*
 Parvovirus B-19 Antibody (IgM) (N) *shipped to outside facility for testing*
 Pathologic Examination *see* **Histopathology, (includes Breast Biopsy and Frozen Section)** in Alphabetical Order Test Listing

PCV *see* **Hematocrit, Automated or Hematocrit, Manual** in Alphabetical Order Test Listing
 Pemphigus Smear *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Penial, Routine Bacterial Culture (Not for GC or Group B Strep) *see* **Genital, Routine Bacterial Culture** in Alphabetical Order Test Listing
 Pericardial Body Cavity Fluid *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Pericardial Fluid Cell Count *see* **Cell Count /Differential Body Fluid** in Alphabetical Order Test Listing
 Pericardial Fluid *see* **Body Fluid Chemistry Panel or Body Fluid Culture (Not blood or CSF Cultures)** in Alphabetical Order Test Listing
 Perianal cultures for Group B Strep *see* **Vaginal (and Perianal) Culture Group B Strep Screen** in Alphabetical Order Test Listing
 Peripheral Smear *see* **CBC/Manual Differential or Manual Differential** in Alphabetical Order Test Listing
 Peritoneal and Synovial Fluids Cell Count *see* **Cell Count /Differential Body Fluid** in Alphabetical Order Test Listing
 Peritoneal Body Cavity Fluid *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Peritoneal Fluid Culture *see* **Body Fluid Culture (Not blood or CSF Cultures)** in Alphabetical Order Test Listing
 Peritoneal Fluid *see* **Body Fluid Chemistry Panel** in Alphabetical Order Test Listing

PG *see* **Amniotic Fluid Analysis** in Alphabetical Order Test Listing

PH Testing in Alphabetical Order Test Listing

Phenobarb *see* **Phenobarbital** in Alphabetical Order Test Listing

Phenobarbital in Alphabetical Order Test Listing

Phenobarbital Level, Blood *see* **Phenobarbital** in Alphabetical Order Test Listing

Phenolphthalein, Urine Qualitative (N) *shipped to outside facility for testing*

Phenotype in Alphabetical Order Test Listing

Phenylalanine (N) *shipped to outside facility for testing*

Phenytoin in Alphabetical Order Test Listing

Phos, Serum *see* **Phosphorous, Serum** in Alphabetical Order Test Listing

Phos, Urine *see* **Phosphorous 24 HR Urine Panel** in Alphabetical Order Test Listing

Phosphatase, Alkaline *see* **Alkaline Phosphatase** in Alphabetical Order Test Listing

Phosphatidylglycerol *see* **Amniotic Fluid Analysis** in Alphabetical Order Test Listing

Phosphorous 24 HR Urine Panel in Alphabetical Order Test Listing

Phosphorous (Random Urine) in Alphabetical Order Test Listing

Phosphorous, Serum in Alphabetical Order Test Listing

Phytanic Acid (N) *shipped to outside facility for testing*

Pinworm Paddle Test *see* **Pinworm Preparation** in Alphabetical Order Test Listing

Pinworm Preparation in Alphabetical Order Test Listing

PKU Newborn Rescreen (S) *shipped to outside facility for testing*

Plasma Catecholamines, HPLC (N) *shipped to outside facility for testing*

Plasma Cholinesterase (N) *shipped to outside facility for testing*

Plasma Renin Activity (N) *shipped to outside facility for testing*

Plasminogen, Functional (N) *shipped to outside facility for testing*

Platelet, Manual in Alphabetical Order Test Listing

Pleural Body Cavity Fluid *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Pleural Fluid Cell Count *see* **Cell Count /Differential Body Fluid** in Alphabetical Order Test Listing

Pleural Fluid Culture *see* **Body Fluid Culture (Not blood or CSF Cultures)** in Alphabetical Order Test Listing

Pleural Fluid *see* **Body Fluid Chemistry Panel** in Alphabetical Order Test Listing

Pleural Fluid Specific Gravity *see* **Specific Gravity (Body Fluid)** in Alphabetical Order Test Listing

Pneumococcal IgG Panel (N) *shipped to outside facility for testing*

Pneumococcal IgG(N) *shipped to outside facility for testing*

PO4, Serum *see* **Phosphorous, Serum** in Alphabetical Order Test Listing

PO4, Urine *see* **Phosphorous 24 HR Urine Panel** in Alphabetical Order Test Listing

Pool *see* **Blood Component Pooling** in Alphabetical Order Test Listing

Porphobilinogen Urine Qualitative (N) *shipped to outside facility for testing*

Porphobilinogen Urine Quantitative (N) *shipped to outside facility for testing*

Porphyrins Feces Fraction Panel (N) *shipped to outside facility for testing*

Porphyrins Plasma Fraction Panel (N) *shipped to outside facility for testing*

Porphyrins Urine 24 Hour Panel (N) *shipped to outside facility for testing*

Porphyrins Urine Random Panel (N) *shipped to outside facility for testing*

Post-Load Calcium Spot Urine in Alphabetical Order Test Listing

Postmortem Examination *see* **Autopsy** in Alphabetical Order Test Listing

Postpartum RHIG *see* **RHIG-Post Partum** in Alphabetical Order Test Listing

Postpartum Rhogham *see* **RHIG-Post Partum** in Alphabetical Order Test Listing

Potassium in Alphabetical Order Test Listing

Potassium 24 HR Urine Panel in Alphabetical Order Test Listing

Potassium (Random Urine) in Alphabetical Order Test Listing

Potassium Hydroxide Preparation *see* **KOH Preparation** in Alphabetical Order Test Listing

Potassium, Urine *see* **Potassium 24 HR Urine Panel** in Alphabetical Order Test Listing

Prealbumin (B) *shipped to outside facility for testing*

Pregnancy Test, Urine *see* **Urine Human Chorionic Gonadotropin, (Qualitative)** in Alphabetical Order Test Listing

Pre-Load Calcium Spot Urine in Alphabetical Order Test Listing

Prenatal Antibody Panel in Alphabetical Order Test Listing

Prenatal *see* **Prenatal Antibody Panel** in Alphabetical Order Test Listing

Prep, KOH *see* **KOH Preparation** in Alphabetical Order Test Listing

Primidone (Q) *shipped to outside facility for testing*

Procainamide/NAPA Panel *shipped to outside facility for testing*

Proconvertin PT Assay (C) *shipped to outside facility for testing*

Profile *see* **Chem 13** in Alphabetical Order Test Listing

Profile, Basic Metabolic panel *see* **Chemistry 7 Panel** in Alphabetical Order Test Listing

Profile, Chem 7 *see* **Chemistry 7 Panel** in Alphabetical Order Test Listing

Profile, Comprehensive Metabolic Panel *see* **Chem 13** in Alphabetical Order Test Listing

Progesterone (B) *shipped to outside facility for testing*

Prolactin in Alphabetical Order Test Listing

Propafenone (N) *shipped to outside facility for testing*

Prostatic Acid Phosphatase (B) *shipped to outside facility for testing*

Prostatic Specific Antigen in Alphabetical Order Test Listing

Protein and Glucose, Cerebrospinal Fluid *see* **CSF Panel (Glucose & Protein)** in Alphabetical Order Test Listing

Protein C Antigenic (N) *shipped to outside facility for testing*

Protein C,Functional (N/WHMC) *shipped to outside facility for testing*

Protein S Antigenic (N) *shipped to outside facility for testing*

Protein S,Functional (N/WHMC) *shipped to outside facility for testing*

Protein, Quantitative, Urine *see* **Total Protein 24 HR Urine** in Alphabetical Order Test Listing

Protein, Serum *see* **Protein, Total** in Alphabetical Order Test Listing

Protein, Total in Alphabetical Order Test Listing

Prothrombin Time in Alphabetical Order Test Listing

Protine *see* **Prothrombin Time** in Alphabetical Order Test Listing

PSA *see* **Prostatic Specific Antigen** in Alphabetical Order Test Listing

Pseudomembranous Colitis Toxin Assay *see* **Clostridium Difficile Toxin A Assay** in Alphabetical Order Test Listing

PT *see* **Prothrombin Time** in Alphabetical Order Test Listing

PTT *see* **Partial Thromboplastin Time** in Alphabetical Order Test Listing

Pulmonary Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Pyruvate Acid (N) *shipped to outside facility for testing*

Pyruvate Kinase (N) *shipped to outside facility for testing*

Qual-BHCG *see* **BHCG, Qualitative Serum** in Alphabetical Order Test Listing

Qual-HCG *see* **BHCG, Qualitative Serum** in Alphabetical Order Test Listing

Quant-BHCG *see* **BHCG, Quantitative** in Alphabetical Order Test Listing

Quant-HCG *see* **BHCG, Quantitative** in Alphabetical Order Test Listing

Quantitative Fibrinogen *see* **Fibrinogen** in Alphabetical Order Test Listing

Quantitative RF *see* **Rheumatoid Factor, Quan (RF)** in Alphabetical Order Test Listing

Quantitative Rheumatoid Factor *see* **Rheumatoid Factor, Quan (RF)** in Alphabetical Order Test Listing

Quinindex *see* **Quinidine** in Alphabetical Order Test Listing

Quinidine in Alphabetical Order Test Listing

Quinine (N) *shipped to outside facility for testing*

Quinora *see* **Quinidine** in Alphabetical Order Test Listing

RA *see* **Rheumatoid Factor, Qual (RF)** in Alphabetical Order Test Listing
 Rabies (B) *shipped to outside facility for testing*
 Random Potassium Urine *see* **Potassium (Random Urine)** in Alphabetical Order Test Listing
 Random Sodium Urine *see* **Sodium (Random Urine)** in Alphabetical Order Test Listing
 Random Urine Glucose *see* **Glucose (Urine)** or **Urine Glucose** in Alphabetical Order Test Listing
 Random Urine Phosphorous *see* **Phosphorous (Random Urine)** in Alphabetical Order Test Listing
 Random Urine Protein *see* **Urine Protein** in Alphabetical Order Test Listing
 Random Urine Uric Acid *see* **Uric Acid Urine (Random)** in Alphabetical Order Test Listing
 Random Urine Electrolytes *see* **Urine Electrolyte Panel** in Alphabetical Order Test Listing
Rapid Plasma Reagin (RPR) in Alphabetical Order Test Listing
 Rapid Plasma Reagin Test *see* **RPR (Quantitative)** in Alphabetical Order Test Listing
RBC Cholinesterase CDTF CHPPUM in Alphabetical Order Test Listing
 Rectal Swab *see* **Stool/Anal Culture** in Alphabetical Order Test Listing
 Renal Cyst Fluid Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Renal Pelvic Washings *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Replaces Kline Test *see* **Rapid Plasma Reagin (RPR)** or **RPR (Quantitative)** in Alphabetical Order Test Listing
 Replaces VDRL *see* **Rapid Plasma Reagin (RPR)** or **RPR (Quantitative)** in Alphabetical Order Test Listing
 Respiratory Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
Respiratory Syncytial Virus in Alphabetical Order Test Listing
 Resp Syncytial Virus Ag *see* **Respiratory Syncytial Virus** in Alphabetical Order Test Listing
 Respiratory Syncytial Virus Antibody (N) *shipped to outside facility for testing*
 Retic Count *see* **Reticulocyte Count** in Alphabetical Order Test Listing
Reticulocyte Count in Alphabetical Order Test Listing
 Review, Slide *see* **Slide Review** in Alphabetical Order Test Listing
 RF *see* **Rheumatoid Factor, Qual (RF)** in Alphabetical Order Test Listing
 RF, Quantitative *see* **Rheumatoid Factor, Quan (RF)** in Alphabetical Order Test Listing
 Rheumatoid Arthritis Test, Qualitative *see* **Rheumatoid Factor, Qual (RF)** in Alphabetical Order Test Listing
Rheumatoid Factor, Qualitative (RF) in Alphabetical Order Test Listing
Rheumatoid Factor, Quantitative (RF) in Alphabetical Order Test Listing
RHIG-Antenatal (28 weeks) (Test Includes: ABO/RH; Antibody Screen) in Alphabetical Order Test Listing
 RHIG-antenatal *see* **RHIG-Antenatal (28 weeks)** in Alphabetical Order Test Listing
RHIG-Post Partum in Alphabetical Order Test Listing
 Rhogam-antenatal *see* **RHIG-Antenatal (28 weeks)** in Alphabetical Order Test Listing
 Rickettsial Disease Panel (N) *shipped to outside facility for testing*
 Ristocetin Cofactor (N) *shipped to outside facility for testing*
 Ritalin (N) *shipped to outside facility for testing*
 Rocky Mountain Spotted Fever Group IFA (VET-BAMC) *shipped to outside facility for testing*
 Rocky Mountain Spotted Fever Panel (N) *shipped to outside facility for testing*
 Rotavirus (B) *shipped to outside facility for testing*
 Routine UA *see* **Urinalysis** in Alphabetical Order Test Listing
 Routine Urine Culture *see* **Urine Culture, Clean Catch** in Alphabetical Order Test Listing
RPR (Quantitative) in Alphabetical Order Test Listing
 RPR *see* **Rapid Plasma Reagin (RPR)** in Alphabetical Order Test Listing
 RSV antigen *see* **Respiratory Syncytial Virus** in Alphabetical Order Test Listing
 RSV Ag *see* **Respiratory Syncytial Virus** in Alphabetical Order Test Listing
 RSV Culture (N) *shipped to outside facility for testing*
Rubella (Qualitative) IgG in Alphabetical Order Test Listing
 Rubella IgM & IgG Panel (N) *shipped to outside facility for testing*
 Rubeola IgG (B) *shipped to outside facility for testing*

Salicylate in Alphabetical Order Test Listing
 Salicylic Acid *see* **Salicylate** in Alphabetical Order Test Listing
 Scleroderma Antibody (N) *shipped to outside facility for testing*
 Scotch Tape Test *see* **Pinworm Preparation** in Alphabetical Order Test Listing
 Screen for FMH *see* **Fetal Screen** in Alphabetical Order Test Listing
 Sedimentation Rate (Seditainer-Westergren) *see* **Westergren Sedimentation Rate** in Alphabetical Order Test Listing
 Sedimentation Rate (Wintrobe) *see* **Erythrocyte Sedimentation Rate** in Alphabetical Order Test Listing
Semen Analysis in Alphabetical Order Test Listing
 Semen Fructose (Q) *shipped to outside facility for testing*
 Serum Cortisol *see* **Cortisol** in Alphabetical Order Test Listing
 Serum Drug Screen *see* **Tricyclic Antidepressants** in Alphabetical Order Test Listing
 Serum Free T4 *see* **Free T4** in Alphabetical Order Test Listing
 Serum Glucose *see* **Glucose (Serum/Plasma)** in Alphabetical Order Test Listing
 Serum HCG *see* **BHCG, Qualitative Serum** in Alphabetical Order Test Listing
Serum Ketone in Alphabetical Order Test Listing
 Serum Lipase *see* **Lipase** in Alphabetical Order Test Listing
 Serum Osmolality *see* **Osmolality (Serum)** in Alphabetical Order Test Listing
 Serum Phosphorous *see* **Phosphorous, Serum** in Alphabetical Order Test Listing
 Serum Protein Electrophoresis (B) *shipped to outside facility for testing*
 Serum Sodium *see* **Sodium** in Alphabetical Order Test Listing
 Serum TP *see* **Protein, Total** in Alphabetical Order Test Listing
 SGOT *see* **AST** in Alphabetical Order Test Listing
 SGPT *see* **ALT** in Alphabetical Order Test Listing
 Sick Cell Preparation *see* **Sick Cell Screen** in Alphabetical Order Test Listing
Sick Cell Screen in Alphabetical Order Test Listing
 Sickledex *see* **Sick Cell Screen** in Alphabetical Order Test Listing
 Sinus *see* **Throat Culture, (or Nasal Pharyngeal) Routine** in Alphabetical Order Test Listing
 Sjogren's Syndrome Antibody (N) *shipped to outside facility for testing*
 Skin Biopsy *see* **Histopathology, (includes Breast Biopsy and Frozen Section)** in Alphabetical Order Test Listing
Slide Review in Alphabetical Order Test Listing
 Small Bowel Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Smear, Gram Stain *see* **Gram Stain, General** in Alphabetical Order Test Listing
Sodium in Alphabetical Order Test Listing
Sodium (Random Urine) in Alphabetical Order Test Listing
Sodium Urine 24 Hour Panel in Alphabetical Order Test Listing
 Sodium Valproate *see* **Valproic Acid** in Alphabetical Order Test Listing
 Sodium, Urine *see* **Sodium Urine 24 Hour Panel** in Alphabetical Order Test Listing
 Soft Tissue Aspirate Culture *see* **Wound Culture** in Alphabetical Order Test Listing
 Somatomedin C(N) *shipped to outside facility for testing*
 Somatostatin (Q) *shipped to outside facility for testing*
Specific Gravity (Body Fluid) in Alphabetical Order Test Listing
 Specific Gravity, Pleural Fluid *see* **Specific Gravity (Body Fluid)** in Alphabetical Order Test Listing
 Specific Gravity, Thoracentesis Fluid *see* **Specific Gravity (Body Fluid)** in Alphabetical Order Test Listing
 Sperm Count *see* **Semen Analysis** in Alphabetical Order Test Listing
 Sperm Examination *see* **Semen Analysis** in Alphabetical Order Test Listing
 Spinal Fluid Analysis *see* **Cell Count, Differential Cerebrospinal Fluid Analysis** in Alphabetical Order Test Listing

Spinal Fluid Culture in Alphabetical Order Test Listing
 Spinal Fluid Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Spinal Fluid for Abnormal/ Malignant/ Cancer Cells *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Spinal Tap Cell Count *see Cell Count, Differential Cerebrospinal Fluid Analysis* in Alphabetical Order Test Listing
Sputum Culture in Alphabetical Order Test Listing
 Sputum Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Squamous Cell Carcinoma Antigen (N) *shipped to outside facility for testing*
 Staclot-LA (B) *shipped to outside facility for testing*
 Stain, Gram *see Gram Stain, General* in Alphabetical Order Test Listing
 Stool Guaiac *see Occult Blood, Stool* in Alphabetical Order Test Listing
 Stool, Occult Blood *see Occult Blood, Stool* in Alphabetical Order Test Listing
Stool/Anal Culture in Alphabetical Order Test Listing
 Straight Catheter (in/out catheter) *see Urine Culture, Catheter* in Alphabetical Order Test Listing
 Streptococcal Group B *see Vaginal (and Perianal) Culture Group B Strep Screen* in Alphabetical Order Test Listing
S-TSH *see Thyroid Stimulating Hormone* in Alphabetical Order Test Listing
 Sugar, Quantitative, Urine *see Glucose Urine 24 Hour Panel* in Alphabetical Order Test Listing
 Suprapubic Puncture Culture *see Urine Culture, Catheter* in Alphabetical Order Test Listing
 Surgical Pathology *see Histopathology, (includes Breast Biopsy and Frozen Section)* in Alphabetical Order Test Listing
Sweat Chloride in Alphabetical Order Test Listing
 Synovial Body Cavity Fluid *see Cytology, Non-GYN* in Alphabetical Order Test Listing
 Synovial Fluid Cell Count *see Cell Count, Differential Synovial Fluid* in Alphabetical Order Test Listing
Synovial Fluid Chemistry Panel in Alphabetical Order Test Listing
 Synovial Fluid *see Body Fluid Culture (Not blood or CSF Cultures)* in Alphabetical Order Test Listing
 Synovial Fluid; Crystal Exam *see Crystal Exam, Synovial Fluid* in Alphabetical Order Test Listing
 Syphilis Screening Test *see Rapid Plasma Reagin (RPR) or RPR (Quantitative)* in Alphabetical Order Test Listing
T&C *see Type and Cross 1-6 units (Must request number in CHCS)* in Alphabetical Order Test Listing
T&S *see Type and Screen* in Alphabetical Order Test Listing
 T. Bil *see Total Bilirubin* in Alphabetical Order Test Listing
 T. Bili *see Total Bilirubin* in Alphabetical Order Test Listing
 T.P. *see Protein, Total* in Alphabetical Order Test Listing
 T3 Free/Total T3 RIA Panel (N) *shipped to outside facility for testing*
 T3-Free (A) *shipped to outside facility for testing*
 T4, Free *see Free T4* in Alphabetical Order Test Listing
 TCA *see Tricyclic Antidepressants* in Alphabetical Order Test Listing
 Tcell Subset Panel(N) *shipped to outside facility for testing*
 Tegretol *see Carbamazepine* in Alphabetical Order Test Listing
 Temptra *see Acetaminophen* in Alphabetical Order Test Listing
 Testosterone (BAMC) *shipped to outside facility for testing*
 Testosterone, Free (N) *shipped to outside facility for testing*
 Tetanus Antitoxid Elisa (N) *shipped to outside facility for testing*
 Tetracyclic Antidepressants *see Tricyclic Antidepressants* in Alphabetical Order Test Listing
 TGL *see Triglyceride* in Alphabetical Order Test Listing
 Thallium (N) *shipped to outside facility for testing*
 Thallium, 24-Hour Urine (N) *shipped to outside facility for testing*
 Theo-Bid *see Theophylline* in Alphabetical Order Test Listing
 Theo-Dur *see Theophylline* in Alphabetical Order Test Listing

Theophylline in Alphabetical Order Test Listing

Thiamine (Vitamin B1) (N) *shipped to outside facility for testing*

Thoracentesis Body Cavity Fluid *see Cytology, Non-GYN* in Alphabetical Order Test Listing

Thoracentesis Fluid Cell Count *see Cell Count /Differential Body Fluid* in Alphabetical Order Test Listing

Thoracentesis Fluid *see Body Fluid Culture (Not blood or CSF Cultures)* in Alphabetical Order Test Listing

Thoracentesis Fluid Specific Gravity *see Specific Gravity (Body Fluid)* in Alphabetical Order Test Listing

Throat Culture, (or Nasal Pharyngeal) Routine in Alphabetical Order Test Listing

Thrombocyte Count *see Platelet, Manual* in Alphabetical Order Test Listing

Thyroglobulin (Q) *shipped to outside facility for testing*

Thyroglobulin Antibody Panel (A) *shipped to outside facility for testing*

Thyroid Needle Aspiration *see Cytology, Non-GYN* in Alphabetical Order Test Listing

Thyroid Releasing Hormone (Q) *shipped to outside facility for testing*

Thyroid Stimulating Hormone in Alphabetical Order Test Listing

Thyroid Stimulating Immunoglobulins & Thyroid Binding Immunoglobulins Panel (N) *shipped to outside facility for test*

Thyrotropin *see Thyroid Stimulating Hormone* in Alphabetical Order Test Listing

Thyrotropin Stimulating Hormone *see Thyroid Stimulating Hormone* in Alphabetical Order Test Listing

Thyroxine, Free *see Free T4* in Alphabetical Order Test Listing

TIBC *see Iron Panel* in Alphabetical Order Test Listing

Tissue Culture, *see Anaerobic Culture or Biopsy (Tissue) Culture* in Alphabetical Order Test Listing

Tissue Examination *see Histopathology, (includes Breast Biopsy and Frozen Section)* in Alphabetical Order Test Listing

Torch Antibody Panel (A) *shipped to outside facility for testing*

Total Bili (Neonatal) *see Neonatal Bili Panel* in Alphabetical Order Test Listing

Total Bilirubin in Alphabetical Order Test Listing

Total Calcium *see Calcium* in Alphabetical Order Test Listing

Total Iron Binding Capacity *see Iron Panel* in Alphabetical Order Test Listing

Total Protein 24 HR Urine in Alphabetical Order Test Listing

Total Protein Urine (Random) in Alphabetical Order Test Listing

Total Protein(SPEP) *shipped to outside facility for testing*

Total Protein, Serum *see Protein, Total* in Alphabetical Order Test Listing

Total T3 (A) *shipped to outside facility for testing*

Tox Screen, Urine *see Urine Drug Screen (Triage) Panel* in Alphabetical Order Test Listing

Toxin Assay, Clostridium difficile (not culture) *see Clostridium Difficile Toxin A Assay* in Alphabetical Order Test Listing

Toxocara Antibody, ELISA (N) *shipped to outside facility for testing*

Toxoplasma Antibody Panel (A) *shipped to outside facility for testing*

Tracheal Culture *see Sputum Culture* in Alphabetical Order Test Listing

Tracheal Cytology *see Cytology, Non-GYN* in Alphabetical Order Test Listing

Transferrin (BAMC) *shipped to outside facility for testing*

Transtracheal Aspirate Culture *see Sputum Culture* in Alphabetical Order Test Listing

Trazodone (N) *shipped to outside facility for testing*

Triacylglycerols *see Triglyceride* in Alphabetical Order Test Listing

Trichomonas *see Wet Prep* in Alphabetical Order Test Listing

Trichomonas Vaginalis in Alphabetical Order Test Listing

Tricyclic Antidepressants in Alphabetical Order Test Listing

Trig *see Triglyceride* in Alphabetical Order Test Listing

Triglyceride in Alphabetical Order Test Listing

Troponin I in Alphabetical Order Test Listing

Triple Marker Screen Panel (A) *shipped to outside facility for testing*

True Cholinesterase *see* **RBC Cholinesterase CDTF CHPPUM** in Alphabetical Order Test Listing
 Trypsin (N) *shipped to outside facility for testing*
 TSH *see* **Thyroid Stimulating Hormone** in Alphabetical Order Test Listing
 Tularemia Antibody (A) *shipped to outside facility for testing*
 Tylenol *see* **Acetaminophen** in Alphabetical Order Test Listing
Type and Cross 1-6 units (Must request number in CHCS) in Alphabetical Order Test Listing
Type and Screen in Alphabetical Order Test Listing
 Type, Blood *see* **ABO/Rh Typing** in Alphabetical Order Test Listing
 Tzanck Smear *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 UA *see* **Urinalysis** in Alphabetical Order Test Listing
 Ulcer Culture *see* **Wound Culture** in Alphabetical Order Test Listing
 Ultrasensitive TSH *see* **Thyroid Stimulating Hormone** in Alphabetical Order Test Listing
 Unbound T4 *see* **Free T4** in Alphabetical Order Test Listing
 Unconjugated Bilirubin *see* **Bilirubin Fractionation Panel** in Alphabetical Order Test Listing
 UPEP Panel (B) *shipped to outside facility for testing*
Urea Nitrogen in Alphabetical Order Test Listing
Urea Nitrogen Urine 24 Hour in Alphabetical Order Test Listing
 Urea Nitrogen, Blood *see* **Urea Nitrogen** in Alphabetical Order Test Listing
 Urethra, Routine Bacterial Culture (Not for GC or Group B Strep) *see* **Genital, Routine Bacterial Culture** in Alphabetical Order Test Listing
 Urethral Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
 Urethral GC Culture *see* **GC Culture** in Alphabetical Order Test Listing
 Urethral Washes *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing
Uric Acid in Alphabetical Order Test Listing
Uric Acid Urine (Random) in Alphabetical Order Test Listing
Uric Acid Urine Panel 24 Hour in Alphabetical Order Test Listing
Urinalysis in Alphabetical Order Test Listing
 Urinary Sugar Test *see* **Glucose Urine 24 Hour Panel** in Alphabetical Order Test Listing
 Urine Ca *see* **Calcium (Random Urine) or Calcium Urine Panel 24 Hour** in Alphabetical Order Test Listing
 Urine Cortisol *see* **Cortisol Urine 24 Hour Panel** in Alphabetical Order Test Listing
Urine Culture, Catheter in Alphabetical Order Test Listing
Urine Culture, Clean Catch in Alphabetical Order Test Listing
Urine Drug Screen (Triage) Panel in Alphabetical Order Test Listing
 Urine Drug Screen *see* **Urine Drug Screen (Triage) Panel** in Alphabetical Order Test Listing
 Urine Drugs of Abuse Screen *see* **Urine Drug Screen (Triage) Panel** in Alphabetical Order Test Listing
Urine Electrolyte Panel in Alphabetical Order Test Listing
 Urine Electrolytes (24 Hour) or (Random) *see* **Urine Electrolyte Panel** in Alphabetical Order Test Listing
Urine Glucose in Alphabetical Order Test Listing
 Urine Glucose Test *see* **Glucose Urine 24 Hour Panel** in Alphabetical Order Test Listing
 Urine HCG *see* **Urine Human Chorionic Gonadotropin, (Qualitative)** in Alphabetical Order Test Listing
Urine Human Chorionic Gonadotropin, (Qualitative) in Alphabetical Order Test Listing
 Urine Lytes *see* **Urine Electrolyte Panel** in Alphabetical Order Test Listing
 Urine Osmo *see* **Osmolality (Urine)** in Alphabetical Order Test Listing
 Urine Phos *see* **Phosphorous 24 HR Urine Panel** in Alphabetical Order Test Listing
 Urine Potassium *see* **Potassium 24 HR Urine Panel** in Alphabetical Order Test Listing
Urine Protein in Alphabetical Order Test Listing
 Urine Protein Random *see* **Total Protein Urine (Random)** in Alphabetical Order Test Listing
 Urine Sodium *see* **Sodium Urine 24 Hour Panel** in Alphabetical Order Test Listing
 Urine Urea Nitrogen *see* **Urea Nitrogen Urine 24 Hour** in Alphabetical Order Test Listing

Urine Voided Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Urine Washing Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Urobilinogen (N) *shipped to outside facility for testing*

U-TSH *see* **Thyroid Stimulating Hormone** in Alphabetical Order Test Listing

UUN *see* **Urea Nitrogen Urine 24 Hour** in Alphabetical Order Test Listing

Vaginal (and Perianal) Culture Group B Strep Screen in Alphabetical Order Test Listing

Vaginal, Routine Bacterial Culture (Not for GC or Group B Strep) *see* **Genital, Routine Bacterial Culture** in Alphabetical Order Test Listing

Valium Panel Quantitative (N) *shipped to outside facility for testing*

Valproic Acid in Alphabetical Order Test Listing

Vancomycin in Alphabetical Order Test Listing

Vanillylmandelic Acid (N) *shipped to outside facility for testing*

Vanocin *see* **Vancomycin** in Alphabetical Order Test Listing

Varicella in Alphabetical Order Test Listing

Vasectomy Studies *see* **Semen Analysis** in Alphabetical Order Test Listing

Vasoactive Intestinal Polypeptide (N) *shipped to outside facility for testing*

VDRL CSF (B) *shipped to outside facility for testing*

Verapamil Panel (N) *shipped to outside facility for testing*

Viral Culture(Non-Herpes) (BAMC) *shipped to outside facility for testing*

Viscosity, Serum (N) *shipped to outside facility for testing*

Vitamin A (N) *shipped to outside facility for testing*

Vitamin B12/Folate Panel (BAMC) *shipped to outside facility for testing*

Vitamin B6 (N) *shipped to outside facility for testing*

Vitamin D,25-Hydroxy (N) *shipped to outside facility for testing*

Vitamin D;1,25-Dihydroxy (N) *shipped to outside facility for testing*

Vitamin E (N) *shipped to outside facility for testing*

Vitamin K1 (N) *shipped to outside facility for testing*

Voided Urine Cytology *see* **Cytology, Non-GYN** in Alphabetical Order Test Listing

Vulval, Routine Bacterial Culture (Not for GC or Group B Strep) *see* **Genital, Routine Bacterial Culture** in Alphabetical Order Test Listing

WBC, Fecal *see* **Fecal Leukocytes** in Alphabetical Order Test Listing

Westergren ESR *see* **Westergren Sedimentation Rate** in Alphabetical Order Test Listing

Westergren Sedimentation Rate in Alphabetical Order Test Listing

Western Blot HTLV I/II (N) *shipped to outside facility for testing*

Wet Prep in Alphabetical Order Test Listing

White Blood Cell Morphology *see* **CBC/Manual Differential** or **Manual Differential** in Alphabetical Order Test Listing

Wintrobe ESR *see* **Erythrocyte Sedimentation Rate** in Alphabetical Order Test Listing

Wintrobe Sedimentation Rate *see* **Erythrocyte Sedimentation Rate** in Alphabetical Order Test Listing

Wound Culture in Alphabetical Order Test Listing

Wound Culture *see* **Anaerobic Culture** in Alphabetical Order Test Listing

Zinc (BAMC) *shipped to outside facility for testing*

Zinc Protoporphyrin (B) *shipped to outside facility for testing*